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ComputerWeekly

Thursday, June 23, 1983

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US steps up ban on eastern exports

■ From page 1

sensitive goods to Eastern Europe.

The UK government is vigorously opposed to the introduction of the military committee at Cocom, and has so far refused to convene the sub-committee to set it up. The revised list of controlled goods is causing even more acute embarrassment.

The advisory document for the list is currently in use by US customs officials, and was released to a congressional committee in April last year. It is so comprehensive that one irritated trade official was heard to say that it amounts to a complete embargo on trade with Eastern Europe.

The problem for the UK is that if it adopts the current proposals at Cocom, it is normal procedure to incorporate those proposals into UK trade legislation.

This would amount to an effective loss of sovereignty over technology trade. The US Chambers of Commerce in Europe have joined the chamber in London in warning the US that "the attempt to give extra territorial effect to US law is not and will not be accepted by the allies".

Amongst those members of the US Chamber of Commerce in London who have broadly endorsed the stand taken by the US companies abroad is IBM.

According to Lawrence Brady, who spoke to *Computer Weekly* after he had received the chambers' view, the USSR is not very good at making computers and has severe error problems with semiconductor production.

"This creates time lag and a qualitative gap which the US wishes to maintain," according to Brady, because electronics is integral to all modern weaponry.

The object of the whole exercise is to deprive the USSR and its allies of militarily valuable technology, he continued.

All the governments of the Alliance agree with this objective, but it is the manner and comprehensiveness of how the goal is being achieved that worries the West. A number of UK nationals have featured in spectacular cases in the US, but the most serious allegations to date in terms of scale of illegal shipments of computers is made against Alan Simmons, whose address in official US documents is given as Liskeard, Cornwall, and who is alleged to be controlling a company in Piraeus, Greece, called Digital Resources Ltd.

In September 1982 Simmons was temporarily denied all US export privileges pending the outcome of any administrative or criminal proceedings resulting from the investigations.

The US customs say that Simmons is suspected of re-exporting up to 25 large computer systems to the Soviet Union via Piraeus without Office of Export Administration licences.

Despite the allegations about the readiness of the UK and against Simmons and five other UK nations, the UK customs have made only 20 seizures in the past year. None has come to court and all have been settled, with administrative action – ie fines imposed by customs.

Micro makers are unaware of help

by Nuala Moran

BRITISH micro-makers are unaware of all the government aid available for their efforts to sell overseas.

That was one of the conclusions of a meeting last week between representatives of the British Microcomputer Manufacturers' Group (BMMG) and senior officials of the Department of Trade to discuss, among other points, government aid for micro exports.

Nigel Smith, vice-chairman of the BMMG and director of Modus Systems, said: "To a certain extent there has been a communications gap. Not every company has been aware of the measures available to help exporters."

And David Wiseman, of the Export Europe division of the DoT, said: "Part of the problem is that people don't absorb information unless they need to know. The Department has done numerous mailshots and presentations as well as advertising and have articles in the national press. I think that the message is starting to get through."

Wiseman feels that British manufacturers have taken full advantage of governmental aid available in the European market.

This was the first meeting between the DoT and the BMMG, which was formed as an ad hoc committee of companies in the UK, to win support and publicity for micro manufacturers. It now has about 20 members.

The group also brought up the four other points of its five-point initiative, including seeking a reduction in the rate of import duty on components from 17% to 7%. The BMMG holds that this gives an unfair advantage to foreign microcomputers, which carry only a 5% duty when shipped into the country fully assembled.

But help on this point was not available from the DoT which pointed out that Customs duties were not its department.

Other points of the group's initiative also did not fall into the DoT's sphere of influence. The BMMG wants British manufacturers to be supported by government purchasing policies.

Smith said: "We want the CTTA (Central Computer and Telecommunications Agency) to take a chauvinistic view in drawing up its list of micros which government departments may purchase."

CLEMENTS . . . "Customers prefer 'one-stop shopping'."

STC 3270 sales hit £12 million

by Donald Kennett

STC Business Systems' first quarter figures include £6.5 million worth of sales for its 3280 IBM 3270-compatible VDUs, which is more than the whole year's sales of the device in 1981. Last year's sales of the device, at £12 million, were higher than the previous two years combined. There are now 120,000 installed in Europe, 16,000 of them in the UK.

Managing director Peter Breen outlined several of the company's successes in the two years since he took over, moving in from STC's Kracia Circuits multi-layer printed circuit board factory in Scotland, where as general manager he had seen turnover grow from £2 million to £15 million in four years.

The company's Perfector 3000 screen-based teleprinter Breen described as a runaway success. There was a greater demand for it than the company could currently cope with, although it had not yet fallen behind with deliveries. The orders placed by British Telecom since the device was launched 15 months ago now totalled £59 million, he said.

Telecom 83, the major international exhibition in Geneva in October, would be the main platform for the launch of STC's office automation system, Breen said.

The system will be based on the STC 6100 message switch and is designed to work with existing PABX networks, as well as providing facilities such as electronic mail, filing and office diaries to users of existing terminals and personal computers. The 6100 on its own was another of Breen's success stories. Sales of £6 million, at an average of £50,000 a system, had been made in two years, he said.

Breen said it was essential if information technology was to get a grip that dramatic improvement be made in the man-machine interface.

Meanwhile the company's OCS-300 digital PABX for 50 to 300 lines is running in its first three pilot installations under the Department of Industry's interim licensing scheme, Breen said he expected British Telecom to approve the system next month.

BREEN . . . Success story.

Managers buy out Q1 Europe

by George Black

AILING micro firm Q1 of Europe, formerly owned by the government's British Technology Group and Q1 of New York, has had a management buy-out.

Q1 of New York filed for bankruptcy under Chapter 11 of US law last September after a year of severe difficulties. The European offshoot has now been taken over, after a "torturous process", by its own employees for an undisclosed sum.

Renamed Quorum Computers, it will be headed by Alan Brown, who has been its chief executive for the past 18 months, with technical marketing director Martin Willard and financial controller Mike Pooley. At present they are being supported by an overdraft from their high street bank, but talks are in their closing stages with a merchant bank which is expected to take a 30% equity in the new company.

Q1 Europe was set up in 1979 by Q1, New York, and the National Enterprise Board under Sir Keith Joseph. The joint venture was to make and sell small office computers, concentrating heavily on software development.

Its first offering in 1980 was the desk-top Microlite, based on the Zilog Z-80 chip, costing between £7,000 and £10,000.

NAS moves to leasing

by Ron Coates

PLUG-compatible maker National Advanced Systems has moved into the leasing business in the UK for its IBM look-alike mainframes and peripherals.

And the company is set to extend its leasing operations to Europe after it has tested the water in the UK.

John Clements, vice-president of NAS Europe and chairman of the new NAS Finance, said: "We are doing this firstly to show more of our long-term commitment to the computer marketplace and secondly because many of our customers prefer to do what I would call 'one stop shopping'.

"And of course IBM have done it and we like to follow IBM — and offer the services that they can offer their clients."

Clements said the majority of clients that had come to NAS since it set up its leasing operation had chosen to lease through NAS. He added: "Some companies will always wish to purchase and do their own internal financing, but this depends on their tax situation."

National Advanced is the major seller of Hitachi-built IBM plug-compatible mainframes. It recently launched its own high speed tape drives. The company was set up in 1979 to take over the products and customers of failed leasing company Itel, which was supplied with medium-sized mainframes by National Semiconductor.

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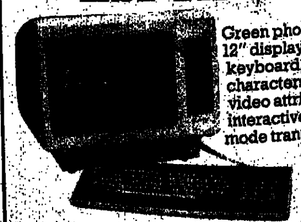

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New VDU safety rules are closer

by John Riley

AFTER years of delay the International Standards Organisation, under its new British secretariat, last week beefed up its commitment to draw up new VDU safety standards.

The first meeting of the sub-committee on VDU safety, chaired by Tom Stewart, a partner in small office systems consultancy System Concepts, decided to base the new standards on the needs of users and not on technical aspects.

"The emphasis is on standards based on the users. We want to make sure that ergonomic standards are based on user needs, and not just watered down technical standards," explained Stewart.

Stewart's sub-committee set up three working groups to develop draft standards in three areas: visual/display aspects; workplace equipment and environment; and task aspects such as job design. The draft standards are expected to be ready for the next meeting of the sub-committee at the end of next year.

The meeting last week in Manchester, was attended by about 30 experts from several countries, including the US, France, Germany and Scandinavian countries.

One of the six British delegates was Dr Colin Mackay, who was the main author of the Health and Safety Executive guidance note on VDUs, published last week.

"The booklet is a good statement of the current position from a good source," said Stewart. "It is a useful way of providing information to help users to help themselves."

■ Are you sitting comfortably? — see page 22.

ComputerWeekly

Thursday, June 30, 1983 Number 866 35p

Whitehall shies away from Inmos sale

by Kevin Cahill

FOLLOWING a bid of £80 million by Gould Inc of the United States, the UK government is judging away from the outright sale of Inmos, the preferred option prior to the election.

According to Gould's president David Simpson, Gould, "looked at Inmos last year, they have a very good team there."

The bid, one of several now being considered by Inmos chairman Sir Malcolm Wilcox, is likely to be rejected in favour of a 15% stake by yet another US-based company.

An earlier offer made by Commodore is no longer considered a serious proposition, although Inmos officials say that when the micro maker appeared they were diplomatically bound to listen.

Potentially waiting in the wings are such blue chip names as IBM, GEC and British Telecom, but none is considered a serious contender.

IBM recently invested nearly £100 million in leading US based chipmaker Intel, and is unlikely to need any further guarantees for its semiconductor supplies.

British Telecom is seriously considering a manufacturing capacity for its life as a private company, but those plans do not extend as far as a semiconductor facility, in either the published or unpublished plans.

ICL is still not recovered enough from its financial disaster of two years ago to buy in to Inmos, though Fujitsu, ICL's partner in semiconductor technology, is a possible contender. Fujitsu's chairman was in the UK last week and spoke to trade officials.

SIMPSON . . . Eyed Inmos.

With Japanese rival NEC opening one semiconductor plant in Livingston next week and with one already on stream in California, Fujitsu stands alone without basic semiconductor manufacturing capacity in two key markets.

Nonetheless, Wilcox is now thought certain to pursue the government's preferred course of getting a 15% stake from an outsider in order to get a value on the shares and then float the company privately in the City.

A group of City institutions already approached have made plain that without a confirmation of value by a respected technology company the City will not cough up the loot.

Recent detainment of UK destined shipments of computers and electronics by the US customs has had the effect of sharply reminding Downing Street of the UK's dependence on American technology.

■ See Leader Comment – page 13.

Minnows demand a better Esprit deal

by John Riley

EUROPE'S medium sized computer companies gave the thumbs down last weekend to the European Commission's 10 year £937 million research and development programme for information technology, Esprit.

The Association of the European Informatics Industry (EII) hit out at the Esprit programme on several counts.

The objections were: that it is inadequately funded, that it benefits only large companies, that it only funds pre-competitive research and makes no provision for competitive research, that results will not be freely available, and that selection of projects will be politically motivated.

The funding offered for the proposed main Esprit programme, as well as for the one year £7.2 million pilot Esprit programme, is similar to that proposed for the Alvey programme in the UK – industry has to stump up 50% of the cost. That is the cause of bitter contention to EIII whose members say they cannot afford that much for speculative R&D.

Mike Smith, chairman of software house CAP, which was involved in the pre-pilot Esprit programme, said: "The IT industries in Europe spend more on research and development than those in Japan, yet Europe's competitive position is being continuously eroded."

Smith thinks that funding should be 100%. "With 50% funding small companies will only participate to do things they would do anyway."

The pilot projects of the Esprit programme will be formally announced this week but there is strong expectation that 85% of the cash will go to the projects with participants from Europe's 12 largest computer manufacturers.

Jacques Maillet, president of EIII and managing director of French DP company Intertechnique, wants a better deal for the smaller companies.

But Doug Lindsay, ICL's key representative in the European Commission, cautiously backed Esprit, amid strong but unsubstantiated rumours last week that ICL is not getting cash for the pilot phase. "ICL's experience of Esprit has been a long experience of healthy scepticism," he said.

Peter Dietz, head of German company Dietz Computer Systeme, concluded: "The message that comes across is that with the exception of ICL, none of us supports Esprit or has participated or has seriously applied for it. Something has to be wrong – either with us or with the programme."

SMITH . . . "Europe's competitive position is being continuously eroded."

Union calls out 50 key BT engineers

by Nuala Moran

FIFTY British Telecom engineers who work in key computer jobs such as data transmission were called out on indefinite strike on Monday.

The strike is a protest against the connection made last week by Telecom management between the private network Mercury and the BT network at Mercury's head office in Long Acre, London.

The engineers are members of the Post Office Engineering Union (POEU) which said it understood the strike had 100% support.

But a spokesman for BT said that only 27 engineers failed to report for duty on Monday morning. "We are looking at the situation to see what needs to be done to maintain our services to customers. BT continues to deplore action of this nature which adversely affects customers," he said.

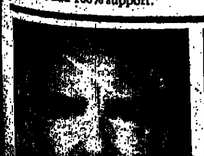
The union says the strike is intended to give management a "short, sharp shock", and added that the action will be extended if any more connections are made.

Telecom says British Petroleum's headquarters in the City of London was also connected to Mercury last week, but the POEU denies this is so. The union expects the connection to be made this week, in which case it will step up the action.

Sandy Skinner, Mercury's marketing communications manager, said he was "not in a position to comment" over the strike, but he confirmed that the connection made last week is operational, and also that the connection was made at BP's offices.

The union plans to finance it actions with a £1 per week levy imposed on all the POEU's 130,000 members.

The POEU is planning a special one day conference for August to consider what industrial action to take to fight the BT privatisation bill. The government plans to formally introduce it in July and expects it to reach the committee stage by October. David Norman, acting general secretary of the POEU, said he did not expect an all-out strike. "It will be hard hitting action aimed at customers involved in Mercury," he said.



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The Bills return with Maggie . . .

by our Parliamentary Correspondent

THE government lost no time following the state opening of the new Parliament in re-introducing the first batch of the Bills halted by the General Election.

And at the top of the queue was the Data Protection Bill which is starting its passage in the Lords second time around.

There is a degree of support from the Opposition parties for the principle of the Bill, although Labour MPs and peers would still like its scope widened to give the public access rights to manual files as well as computer-held information about individuals.

A tough fight again lies ahead, however, following the reintroduction of the British Telecommunications Bill, in the same form as the previous Bill. It will transfer British Telecom from being a state corporation into a private company, with the government intending to sell 51% of the shares to the private sector.

No target date has been fixed for the sale but there is expectation that the deals will be completed by the autumn of 1984.

Labour, with strong union support, intends to mount a spirited rearguard action to delay progress with the legislation as long as possible. But with a 144 Conservative majority in the new Commons there is little hope of them achieving any substantial amendments which the government is not willing to concede.

Those amendments that are made are more likely to result from a few misgivings expressed by Conservative backbench MPs.

Fears that the government intends to break up British Telecom into several smaller companies are not likely to be realised, but the government hopes to open new job opportunities and there will be now rules to govern telecommunication equipment standards.

The Bill will prevent British Telecom exploiting its dominant position in the market by providing increasing opportunities for both domestic and business users of telecommunications services and apparatus to have a wider choice of supplier.

Controls on the availability and use of pirate telegraphy apparatus are tightened by the Bill.

Another Bill, foreshadowed in a White Paper in April and confirmed in the Queen's Speech programme, is the proposed Cable Bill. This will provide for the setting up of a Cable Authority and developing multi-channel cable.

The Queen's Speech promised "continued attention will be paid to the development and application of new technology." And that was one of the themes developed by the Prime Minister in her opening speech setting out the aims of government.

Election kills the Bills

by John Kavanagh and George Black

FOUR cornerstones in government policy affecting the computer enabled with the [illegible] It would cover manual systems as well as computers, for example.

The British Medical A[illegible] welcomed the IDPA Bill. "We hope the P[illegible]

From Computer Weekly, *May 12.*

Expenditure on science and technology has risen from £106 million in 1978/79 to a projected £325 million in 1983/84 — an increase of 80% in real terms.

Within the total, Support for Innovation in industry has risen from £57 million in 1978/79 to £230 million in 1983/84 — an increase of 135% in real terms.

Overall direction continues to be in the hands of Kenneth Baker, Minister for Industry and Information Technology, within the merged Department of Trade and Industry. The overlord of the department, Secretary of State Cecil Parkinson, has previous experience in the trade side but will want to rely a good deal on Baker until he settles down to his wider responsibilities.

Tandy delves deeper into business market

by John Kavanagh

TANDY is pushing further into the business market with a 50% expansion of its UK microcomputer dealer network over the next year.

The big US electronics firm is taking on at least one dealer a week and setting up 25 computer shops or departments of its own by next summer.

Tandy has over 220 shops and 100 dealers in the UK. All its shops sell computers and 25 of them only sell computers while 44 have separate computer departments. Computing now accounts for 35% of the company's business.

"We're much more business computing oriented than before," said UK managing director John Sayers. "The computers-only stores are business centres, providing demonstrations, training and service to local businesses. Over 60% of our computing revenue now comes from the business market."

Sayers said Tandy was expanding its dealer network across the world. The company had nearly 8,850 outlets worldwide, 6,500 of them in the US. In the UK David Bryant has been appointed to find and appoint dealers.

SAYERS . . . A dealer a week.

Tandem gets into shape for Europe

by John Riley

TANDEM Computers, the US-based market leader in fault tolerant minicomputer systems, has reorganised its European operations into a new division called Tandem Computers Europe, to take advantage of the [illegible] competition.

Increased competition from IBM and DEC and other companies which have recently launched fault tolerant systems has helped Tandem considerably, according to UK managing director John Louth, and the trend in growth has not slackened.

"The new division provides a single management focal point in Europe," said Gerald Peterson, Tandem vice-president of international marketing. "We see significant opportunities for continued growth there and it is important that we have the right organisation and infrastructure in place to provide timely and specific support there."

Louth explained the paradox that sales had become easier to win since the entry by other companies into the fault tolerant market.

"Being first in the fault tolerant market caused problems in gaining credibility for the concept," he said, "but now that IBM and DEC are selling fault tolerant systems more people are coming to us saying that they need them."

Tandem does not regard the market for fault tolerant machines as competitive at present. "We see fault tolerance as a general requirement and liken it to the introduction of virtual memory. So rather than competing one against the other it is a question of big or small systems."

Tandem recently launched a fibre optic link for its NonStop systems which allows 14 systems, each with up to 16 individual processors to be connected to a distance of one kilometre apart.

According to Louth, this makes it possible for large mainframe users to distribute big databases to local processors in individual departments.

LOUTH . . . Competition has helped Tandem.

ICL hits back at US export ban

A TOP ICL man last week hit out at the US government's attempt to control high technology exports.

Free trade in high technology is rapidly being stifled by the US, and the US Defence Department is exerting a direct influence on trade affairs to tighten the restrictions still further, according to ICL's Jeremy Strachan, head of the group's legal services.

Two weeks ago, in the face of an unprecedented blitz on 10 Downing Street by US vice-president George Bush and various other US government high officials, including Casper Weinberger the Defence Secretary, the Prime Minister set up a special Cabinet sub-committee to consider the situation.

So far ICL, which does £35 million a year in Eastern Europe, is the first company to come out in the open, although other companies including Ferranti, Marconi, GEC, and Plessey are known to have had discussions at the Trade Department about the detainment of computers and electronic gear intended for UK companies.

Strachan, speaking to a meeting of the EIII, the Association of the European Independent Informatics Industry, whose members include ICL, Plessey, GEC, Ferranti, CAP, and CASE, said: "ICL sometimes can't understand why we can't get export licences for comparable machines for comparable countries in comparable circumstances."

His remark came in the context of a renewed bid by ICL to develop trading links with China.

China, with other countries of the Eastern bloc, was in a special category and required export licences for all high technology goods.

But two weeks ago the US administration declared that China was now cleared for computer shipments, omitting to mention that in 1982 alone the US shipped $118 million worth of computers to China.

This massive delivery of computers was made while companies like ICL, Fujitsu and Hitachi were denied, through the Cocom committee procedures, licences for large deliveries of computers to China.

Strachan also complained about the US application of extra-territoriality. This is the extension of national law beyond national boundaries and is one of the key issues at government level between the US and the UK.

"US export control is the most pervasive, elaborate and detailed system of export control in the world," according to Strachan.

He noted that "the US seeks to control any product which contains goods or technology of US origin. The US tracks and polices exports of end products around the world."

The US denial list, as it is called, is 400 pages long and Strachan said that many US corporations had to maintain a full-time vice-president in Washington just to deal with the list.

This is something European companies — some which would merely be using a US made fan in a machine — could not afford to do.

Strachan also confirmed that ICL had discovered items which the US would not ship to the Allies, even where the goods were not intended for incorporation or on-shipment to Eastern Europe.

Referring to the Cocom list, which is now the centre of a major deadlock between the UK and the US, Strachan said: "The US regarded the Cocom list as a minimum, whereas the UK regarded it as a maximum."

Cocom is the Nato co-ordinating committee for technology trade between the Allies and Eastern Europe.

The committee is currently considering a series of US proposals for tightening up on what can be shipped to the East. So far the UK has refused to countenance those proposals.

Strachan's comments brought surprised reaction from some of the other participants at the meeting, including Jacques Maillet, president of the EIII, who had not been aware of the extent of the US legislation and described it as "absurd".

Peter Dietz, president of German company Dietz Computers, expressed scepticism about a German company needing a US licence to ship to France, but Strachan assured him that this was just what extra-territoriality meant in practice.

"Just check your licence for US equipment," Strachan said. "They are stamped 'Not licensed for re-export' and theoretically you have to contact Washington for permission to re-export."

. . . but South Africa doubts its law

by George Black

THE South African Computer Evidence Bill promulgated in May has raised doubts among industry leaders there about whether it will work in practice.

The bill came into effect not long before the re-introduction in the UK of the Police and Criminal Evidence Bill, which contains an important clause designed to allow the evidence of computers to be presented in court.

In South Africa computer output can be admitted if accompanied by an authenticating affidavit. But many bodies, such as government departments, banks and insurance companies are exempt from the affidavit provision.

But the South African Computer Society objects that making such exceptions is unfair. Affidavit signers are liable to fines if the computer turns out to be wrong. The South African Computer Users Council has also objected.

Data processing managers may be loath to sign the affidavit, it is feared, and supplementary affidavit from his staff may also be required, forcing up the cost of litigation.

The bill was promoted by the banks who want to cut out the need for personal evidence in court. South Africa still awaits suitable test cases to find out the law's implications.

In this country there will be a similar need for showing that the computer concerned can be relied on, but here too the details of procedure remain unclear.

France pushes on with videotex plan

by Jack Gee

FRANCE's Ministry of Telecommunications has announced that it is to invite tenders for a new generation of intelligent computer terminals as it pushes ahead with its teletel interactive videotex programme.

Proposals are to be requested from manufacturers later this year for a terminal, equipped with the potential of a microcomputer, which will cost no more than the Minitel, the model which is now being installed at a unit price of 1,200 francs (£100).

It will be used in association with microcomputers of the Apple II type or the newly introduced TO-7 manufactured by Thomson-CSF.

First deliveries of the new intelligent terminals are scheduled for the middle of 1985. By then about 700,000 Minitels will already have been supplied for Teletel, principally for connection to French Telecom's electronic telephone directory.

The first order for the new super-mini TELS is expected to be for between 300,000 and 500,000 units.

Its introduction by French Telecom is expected to provide a major boost for the French peripherals industry. Existing Minitels lack the intelligence required for association with professional line printers.

The new terminal programme is also regarded as a significant step forward for France's five year electronics plan, the so-called Filiere Electronique whose ambition is to hoist the country into the same rank as Japan by the end of the 1980s.

Compec North warms all

by Andrew Thomas

DESPITE competition from World Cup cricket at Old Trafford, over 5,000 people went through the turnstiles at Compec North last week, an increase of 16% over 1982. And with the number of stands nudging the magical 100 mark, there was plenty for them to see.

Held over three days at Belle Vue, the third Compec North appeared to go down well with the public, for not only were the attendances up, the visitors tended to stay longer than in previous years.

Considering the sometimes oppressive heat in the exhibition hall (a fire extinguisher set itself off on Wednesday afternoon), the public's tenacity must be put down to the quality of the exhibitors.

And, although new hardware was on show on several stands, much of the talk concerned a product which wasn't there — the ACT Apricot.

"That's the one that'll matter," one exhibitor told me. "There's a lot of people here that should be worried — if it doesn't hit them between the eyes, it'll hit them where it hurts."

Despite the heat, there were no hardware failures that I could see, and considering the sweaty state of most of the people in the hall, that's a pretty good reflection of the reliability offered today. But if anything were to go wrong, help was on hand in the shape of third party maintenance firm CFM.

On the CFM stand, Doug Wood was in buoyant mood, clocking up £190,000 worth of new business during the show.

"And that's a minimum estimate," said Wood. "The show went extremely well, we're very pleased indeed."

Things went well too for software distributor Tamsys, and extra staff were summoned to man the stand.

"It's extremely good," said Pat Oldcorn. "It's much busier than last year, and there's a general feeling that there's more money and interest around. We're very pleased with the business and we had only a few moments when there wasn't anyone on the stand.

"It's one of the successful shows, we had lots of interest, and there was a higher level of knowledge than I've known from some exhibitions."

And Nigel Hepworth, of Unit C, reported "several tens" of useful leads for its DEC software products. Other firms were pleased too: Ferranti — "Not bad, a bit warm though"; NCR — "Good but hot"; IMP — "We've sold more than enough to cover our expenses, but it's bloody hot".

And with the emphasis on the temperature, it was no surprise that the Andrews Air Conditioning stand was the place to be, with its refreshing display of working equipment.

"Not bad for us, it's better than Compec Scotland", said an Andrews spokesman.

Compec North did well for crowds and stands.

Multicomputer goes to San Jose

by John Riley

THE San Jose based microcomputer company Molecular Logic last week bought its UK distributor, Brentford based Multicomputer, for an undisclosed sum.

Multicomputer has marketed Molecular's M200 multi user, multi-computer system for over 18 months, and had a turnover in 1982 of about £1 million. Molecular's total turnover last year was $22 million.

Arthur Kennedy, Multicomputer managing director, is to stay on in the same post and to take over as general manager of Molecular's European operations.

"We wanted a direct presence in Europe", said a spokesman for Molecular. "Multicomputer was very successful, but it is not the same as controlling a subsidiary. The acquisition will give us a foothold in Europe much more quickly than if we were trying to do it from scratch."

Molecular states that all the UK employees are being retained, and that new staff is being added. The company has considered manufacturing in Europe, but says that it is too early to determine whether it would be more economic to manufacture than to ship the systems. For the present it intends to build up its presence in Europe.

The M200 systems give each user a separate Z80 CPU with 64 Kbytes RAM and access to shared disc files, peripherals and a remote terminal. Up to 225 users can share hard disc storage which can be expanded to 600 Mbytes.

The system runs under a CP/M operating system, n/Star, and will run standard CP/M application programs.

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Analysts scorn the IBM/Rolm tie-up

by Kevin Cahill

TWO leading US computer industry analysts have cast doubt on the value of the recent Rolm/IBM tie-up.

Analysts Clifford Higgerson and Karen Mulvaney of San Francisco brokers Hambrecht and Quist said it would be at least two years before IBM had a third generation voice data switch for the middle and upper end of the PABX market, despite the deal with Rolm.

A true voice data switch which can handle data as easily as voice is the key element for companies involved in the office automation industry, according to the analysts, who note that IBM's tie-up with Rolm implies that IBM has failed to find such a switch internally or through the now abandoned deal with Mitel.

If the deal with IBM does not work out, it may be too late for IBM to find a means of getting into the field on time.

This implies that IBM could find itself a minor force in the office automation market.

Mulvaney and Higgerson note that IBM has been trying to develop a switch for 15 to 20 years and still does not have a product.

They point out that IBM has been selling the Carnation switch in Europe for several years, but has not tried to do so in the US.

Rolm has strenuously argued that its CBX product is adequate. The analysts say it is adequate for existing requirements, but probably does not have the capability to meet the data requirements of most users in the late 1980s.

On a more general level the two analysts say that the deal is also confusing because both companies have similar strengths and weaknesses. Both companies, they note, have strong end user marketing capability, are well managed and have very strong balance sheets.

The deal will do most to benefit Rolm, which has everything to gain and nothing to lose, they say.

PEARSON . . . "It can only get sunnier".

Whitehall's IT staff worry will be tested

by John Riley

THE Institute of Manpower Studies (IMS) is to receive £15,000 to examine Whitehall's worry that the information technology industry is not getting enough new graduates.

Last week the Department of Employment commissioned Brighton-based IMS to interview about 100 high technology employers to see if there is a problem, and to identify employers' needs. The resulting report, expected to be ready in three months' time, will be fed to the Department of Education for action.

"The main route to technical jobs is through the universities," said Richard Pearson, head of the IMS Labour Market Group who will conduct the research, "and if we've got a shortage of graduates coming into the industry now at the bottom of the recession, it can only get worse if nothing is done.

"We are therefore looking for evidence of shortages of graduates in new technology industries and whether new courses in the universities; for example MSc courses in fibre optics or circuit design, would help redress the situation. I am anxious to learn from people in the IT industry with recruitment difficulties," he said. Pearson can be contacted on 0273 686751.

The IMS is currently completing a £75,000 survey on recruitment problems in the European semiconductor industry.

Quality aces plan a summit

by George Black

THE biggest software validation conference to be held in Europe for at least 10 years takes place in Darmstadt, West Germany, in September.

Sixteen top names from the US and Germany has been lined up to see if a plan can be worked out to combine all their approaches to the hot topic of quality control.

Heading the list is IBM's Michael Fagan, making a rare appearance on this side of the Atlantic to expound the software inspection method which he developed. Ed Muller of Software Research Associates will present his alternative approach of path-testing and Professor Lori Clarke from Massachussets University will describe his symbolic evaluation system.

A team of three from Stanford Research Institute, led by Karl Levitt, will explain its attempt to advance formal verification from smaller programs of less than 2,000 lines to larger systems such as compilers.

Other guests include Colorado University's Leon Osterweil, a data flow analysis expert and Texas University's Donald Good, Richard Fairley of Wang Institute and Leon Stucki of Silver Spring will discuss software tools.

The symposium is being organised by the National Computing Centre and its German equivalent GMD and is scheduled for September 26-30.

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DEC puts micros on the streets

by John Kavanagh

US GIANT Digital Equipment (DEC) is moving into the high street to sell its microcomputers directly to small business users.

The first DEC Small Business Centre will be opened in Geneva at the end of the summer and other centres will open in major European countries this year.

At the same time the company is to start building the microcomputers in Europe.

DEC has 25 retail centres in the US selling its Professional and other microcomputers, launched last year. But in Europe it has sold to small business through dealers, concentrating its own sales force on orders for many machines from big companies.

DEC's growing activity in the end user market has upset minicomputer systems houses, which do not want competition from their main supplier.

But the company's microcomputer dealers have so far shown little concern about the centres.

"There has been conflict on the minicomputer side in the UK but as far as the Small Business Centres are concerned there's been no conflict in the US and no negative reaction from our distributors in Geneva," a DEC spokesman said.

"We are not aiming to take bread out of the mouths of our dealers. We see these centres helping users and helping us understand users better."

James Wickes, head of UK dealer Beauchamp Computer Systems, welcomed DEC's move. "DEC's plans don't worry me in the slightest," he said. "This will give DEC a high public profile – and that will mean more sales for us."

But Wickes had a warning for DEC: "If they're doing this to increase sales through the shops, they're wrong, judging by the experiences of others, including some very professional firms.

"Shops don't work in the UK. Shop staff don't have time to sit with the customer and go through a package to explain it and make sure it fits the precise needs.

"In the US that doesn't matter because people have more money to throw around and they don't have to be sold a system so completely. In the UK there's less money around and people want to go into a system in detail."

The Small Business Centres will provide some initial consultancy to small businesses, sell microcomputers and software and provide training. DEC said it would be consulting centres rather than shops.

The decision on manufacturing is now being made at top level in DEC in Europe. The company has plants in Germany, Scotland and the Irish Republic.

One of the two Irish plants, in Galway, could be the main candidate for microcomputer manufacture as DEC is planning to invest £9 million in re-organising the factory.

HUNT . . . "We're in the acquisition mood."

MSA pays $6m to grow

by George Black

THE top American software house MSA has paid around $6 million for Computeristics of Connecticut, once owned by tyre company Uniroyal.

The deal involves MSA taking over the software division of Computeristics – which represents most of its working parts – for 100,000 shares of stock plus $1 million in cash – and MSA has $1.7 million of liabilities to pay off, by way of bank loans and other commitments.

Computeristics president James Chambers will become head of the MSA division, promoting the renamed MSA order processing system. MSA will take over the firm's 60 technical staff, a few of whom could be moved to BSA's new premises scheduled to open in Maidenhead in August.

The takeover still leaves MSA with money to spend from its recent raising of $55 million.

"We're in the acquisition mood right now," said executive vice-president Michael Hunt, "and looking to expand our applications range further."

The Computeristics products will help to consolidate MSA's financial and manufacturing systems which have made it the world's largest organisation of its kind, with a revenue above $100 million a year.

The move strengthens MSA's applications range with the order processing system CustomOrder, as well as removing a rival in the accounts receivable sphere in CustomAR.

SALES BRIEF

Irish plant wins £45m Aussie deal

THE Wang factory in Limerick has won a £45 million order for computers from the Australian Department of Social Security.

It is the largest office automation deal yet in Australia, and its objective is to establish a federal communications system replacing the existing state-based system.

Brewery trial

GRAND Metropolitan subsidiary Samuel Webster Brewery has ordered a Wang Alliance 250 as the core of an office automation trial. The machine is to be added to a Wang OIS 140 word processing system installed in January, bringing the total value of the order to £120,000. Two senior executives and their secretaries will try using voice messaging, electronic mail and diary facilities.

Types for IBM

MONOTYPE Corporation has signed a long-term agreement with IBM to supply data from its library of digitised typefaces for use on the recently launched IBM 6218 photo-typesetting machine. The machine can handle on-demand printing of scientific text to a resolution of 600 dots-per-inch, which is comparable to conventional machines working from photographic images.

First in UK

APPLIED Communications Limited (ACL) has won a contract from the Trustee Savings Banks Scotland to provide an online ATM network with full client transaction authorisation to run on Tandem computers. The deal involves BASE24-atm, ACL's EFT processing and switching software package. This is the first such package to be installed in the UK.

£8m training

TELCONSULT, the overseas consultancy division of British Telcom International, has been awarded an £8 million contract to train 780 Libyan telecommunications students in the UK. The contract was awarded by the Libyan Posts and Telecommunications Department. The training, to run for seven years, will be given by the BT inland training division.

Keeping track

BANK of America has bought a UCC One tape management system from UCC Software Products to keep track of more than 4,000 tapes at its IBM installation in Croydon. The bank's unified database contains about 10 bytes of data and this is expected to double over the next two years. UCC One is in use at more than 2,000 sites. This is claimed to be several times as many as all its competitors combined.

£90,000 modems

WALES Gas has placed a £90,000 order for 36 9,600-bit-per-second modems with Codex. The Type LSI V29 modems will be used on British Telecom leased lines and on Wales Gas' own microwave radio circuits between four regional offices and the ICL 2966 mainframe at head office in Cardiff, where data on customers, employees, materials and the gas network will be processed.

Bank order

NATIONAL Westminster Bank has ordered £338,000 worth of Datapoint Arcnet based hardware and software as a step towards putting a set of distributed integrated accounting applications into its purchasing and stationery department. The bank has now spent £750,000 on Datapoint equipment.

UK intelligence record isn't bright

by George Black

BRITAIN has failed to invest in artificial intelligence for so long that it cannot now deliver the goods in time.

That was what a meeting of more than 70 people from the computer industry, the academic world and prospective users heard from Masoud Yazdani, a lecturer at Exeter University.

He told a London seminar that there had been very little spending on expert systems here so far, compared to what had been understood to be by the US defence department.

Now the Alvey committee was calling for products to be marketed within three years.

"But if you don't invest you can't expect to get the technology on," said Yazdani. "The goals can't be achieved short-term."

Early failures had resulted from being over-ambitious, he said. Now researchers had narrowed their sites from general intelligence to particular domains and the results were beginning to come.

Richard Forsyth, of North London Polytechnic and Hexadecimal Press, criticised Alvey's plan for a smart robot project as part of the expert systems programme.

"It seems to me to be barking up the wrong tree," he said. "This type of project is not calculated to show expert systems off in their best light, because they are more suited to intellectual tasks, where expertise is scarce."

The seminar brought to light the broad range of work under development. Southdata has commissioned two groups to turn its free-form database Superfile into an intelligent system.

One is being carried out by Donald Michie's Edinburgh team, based on his ACLS program; the other by Hexadecimal, linking Superfile to its Beagle system.

Hexadecimal's Forsyth is also building an expert system generator for the BBC micro, called Hulk.

Peter Jones, whose Reveal is being marketed by Tymshare bureau, announced that it was being converted for DEC and Prime hardware, and would be available on the IBM PC by the end of the year.

Phil Cox, of Isis Systems, told the meeting about its new advice language system Micro Expert, which had evolved from one of the first expert systems money-makers, the geologists' Prospector.

Vendors are told to prove themselves

by John Riley

COMPUTER manufacturers and software houses should prove their credibility by letting prospective customers make random checks on how satisfied their existing clients are.

That view was expressed last week by Ian Andrews, managing director of Advanced Business Technology (ABT), a leading Data General software house, and he is prepared to do just that.

"Buyers shouldn't touch systems if random checks can't be made on the client base – that should be a pre-requisite," he said. "Anybody can see any of my customers, and I believe that is the ultimate in a free market.

"Of course you need to check more than one customer, as there are always meanies. While not all people are happy all the time, most people are extremely fair. An ideal sample would be about five or six. What matters to the user is not how expensive or how good the equipment or services are, but whether he gets a good deal."

ABT writes business applications software for a broad base of industries ranging from medium sized family companies to multinationals, and customers include British Airways and ITT.

The Bushey based company was set up last year after breaking away from Allan D'Morias consultants, employs 20 staff and has had a first year turnover of about £1 million.

Caution on the issue of random checks was urged by David Rates, Chairman of the Software Products Group of the Computing Services Association, and managing director of software house Hallmark Associates.

"There is a tendency for many companies to promote their happiest customers and the more openness in the industry the better. But it is too sweeping to say that everybody ought to release customer lists.

"There are all sorts of commercial implications and not all customers want the equipment and services they are buying to be known. Therefore one should be cautious of condemning companies because they don't allow random checks."

ANDREWS . . . Random checks.

ICE breaks the Arab market

by John Kavanagh

DISC and tapes from a young UK firm have gone on sale in department stores throughout the Middle East. And the company Independent Computer Engineering (ICE), has followed up this £2 million order with plans to manufacture in the US and raise money on the Stock Exchange to fund its rapid growth.

The Middle East order is from Riyadh House Est, which has a dozen department stores across the region. It has recently started selling business microcomputers from Wang, Apple and Victor in the stores.

It has ordered 20- and 40-megabyte Winchester disc systems, tape back-up units and multiplexers which enable several microcomputers to share one disc drive.

ICE packages disc units from the UK manufacturer Rodime and the tape drives from the US firm Cipher. It adds its own interfaces and control software and builds the multiplexers itself.

This order takes ICE's exports to over £5.5 million in its second year. Its total business this year is expected to top £8 million.

"The customer wants to take a fifth of the order in the first month," said marketing director Andy Robson.

ROBSON . . . Looking for cash.

"We can cope with that. We've had the normal problem of cashflow from rapid growth but we're now getting on top of it."

The venture capital firm Electra took 15% of ICE for £250,000 early this year. But Robson said it would be essential to go for a Stock Exchange listing to raise more money, probably early next year.

ICE is represented in 15 countries. It has had an agent in the US for a month but is now aiming at building systems there. Robson said it would be cheaper to manufacture in the US than to ship completed products from the UK.

In Europe the company is looking to boost its operation in Germany following a recent £2 million order there.

Robson added that ICE would also be doing more in the UK now that the overseas dealer and distributor network was set up: The company has 45 staff and is growing.

Telecom is urged to cut prices

By George Black

BRITISH Telecom is being urged to cut its charges to users after turning in half-year profits last year of £268 million.

And users now have a chance to tell BT what they think of it at its first Telcare (Telecom Customer Attitude Research) centre just opened in Ilford.

Two more centres will be opened in Coventry and Newcastle by September, creating 300 jobs.

But the Computing Services Association (CSA) says BT is still out of touch with its move to put up prices, including those of private leased lines.

CSA director general Doug Eyelons said: "Costs of all technology, whether fibre optics, satellites or microprocessors, have been steadily falling. It's only BT that thinks of putting prices up instead of down."

The CSA had found direct attack on BT to be fruitless, so they had switched to pressing for liberalisation – not privatisation, he added.

"We think they have become competitive as a result, but we still have to wage a constant campaign to try to get the cost of data communications down in the interest of all our members," he said.

Mainframes are alive

by John Kavanagh

REPORTS of the death of the mainframe have been greatly exaggerated, according to the US research firm Predicasts. In a new report* the company says mainframes are more than holding their own because technology improvements have given them "awesome computational capabilities" and opened up new applications.

Predicasts says the day when powerful small computers force the mainframe into extinction is a long way off and may never come at all. The US mainframe market has shown a 4% annual growth since 1967 and is still the biggest part of the computing equipment industry. Sales in 1981 were $9,600 million.

Big markets are banking and the wholesale and retail trades. The growth of electronic funds transfer means banking accounts for 22% of mainframe sales.

Funds transfer will also boost sales to the wholesale and retail trades. This will be the fastest-growing area, with sales going from $855 million in 1981 to over $2,600 million by 1995.

Sales to the manufacturing industry have slowed because of rising labour, energy and capital costs, Predicasts says. But the trend towards boosting productivity will stop this decline.

Supercomputers have been slow to make an impact, despite their power – or perhaps because of it.

**Mainframes and Supercomputers.* 93pp. $1,095. Predicasts, 11001 Cedar Avenue, Cleveland, Ohio 441106, US. Tel: 0101 216 795 3000.

Software Sciences invades the US

by George Black

SOFTWARE Sciences is about to stage a large-scale invasion of the US through its parent Thorn-EMI and the newly-acquired Altergo subsidiaries. The plan is to open six new offices in New York, Chicago, Los Angeles, San Francisco, Texas and Philadelphia, with the former Altergo premises in Boston as transatlantic headquarters.

In charge of the operation as president of Altergo Products Inc will be David Packwood, who joined Software Sciences from Quelsoe late last year when the Control Data buy-in to Systime was imminent.

His deputy will be technical vice-president John Millis, who has been running Altergo's 370 sales since former boss Len Levy sacked his predecessor Joe Piccirel.

The announcement gives the firm a springboard from which to launch into the US.

Packwood flew to Boston on Monday to start his task by recruiting six top IBM software salesmen to set up the new regional offices. The aim is both to find new American products to sell worldwide and to take new systems developed by David Rodway's UK team and sell them to the US.

"The US is wide open because many of their products are not that good, even the established ones," said Packwood.

The company is looking to make a quick acquisition of a West Coast banking applications house as a way in to the booming "vertical" (industry-specific) market.

Packwood will be looking for other software companies to do deals with and managing director Mike Shone said he anticipated doubling the turnover of Altergo Products Inc every year, from its £1 million a year base.

SHONE . . . Anticipates a double.

Dismayed DEC users meet about axing

by John Kavanagh

DIGITAL Equipment users from around the world are meeting in the US next month to discuss their response to the company's axing of upgrade processors for its DECsystem-10 and 20 mainframes.

The international conference will discuss the replies to a 14-page questionnaire sent by the DEC users association, Decus, to all DECsystem users within days of the company's announcement. User meetings have already been held at national and European level to gather reactions.

DEC dismayed customers by saying it was going to concentrate on its top-end processor development on the 32-bit Vax range – although it would still build and support the older 36-bit DECsystem family.

DECsystem upgrades would be possible only through the new Interconnect facility, which can link two processors.

"The DECsystem issue is Decus' major concern at present," said Ian Griffiths, chairman of the UK DECsystems group in Decus and computing manager at Trent Polytechnic. "User reaction is generally one of understanding coupled with frustration and disappointment. It ranges from anguish to not too worried."

He added that DEC was taking the July meeting extremely seriously. The company had promised to reply by August 1 to any proposals coming out of the meeting.

■ DEC has signed a second joint marketing and servicing agreement with a third-party memory supplier. Two months after sealing a deal with rival National Semiconductor it has agreed to sell and support Ampex memories for DECsystem-10s.

Ian Griffiths at Decus welcomed the news. "It's important that users can get all maintenance from one place," he said.

A winner all along the line: The new MPS96 9600 bit/s modem.

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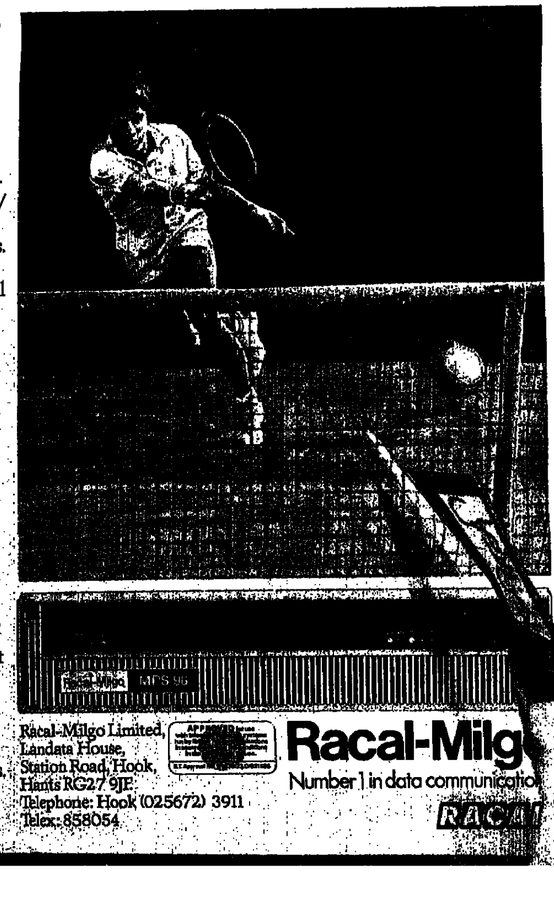

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Soviet trade ban hurts UK houses

THE virtual total embargo on licensed shipments of high technology to the Soviet Union by the US has already hit three small UK systems houses.

The senior management of Greenford based Servotest, largest UK shipper of DEC based industrial control systems to the USSR, went into a crisis meeting with Hastings-based parent Derritron Group two weeks ago.

The reason for the meeting was a failure by the company to obtain further shipments of computers from the US, and a failure to obtain any further supplies for exports to Eastern Europe.

Derritron went into receivership last autumn, due to the failure of the company to obtain computers for licences already issued.

According to former staff of the company, a very large order, scheduled for delivery in 1981, had been held up for over two years in the wake of the Soviet invasion of Afghanistan, and several other orders and cooperation agreements are still hanging fire.

Bryan H. Dando managing director of the new Derritron Group bought up parts of Derritron and confirmed that the company was not currently doing business with Eastern Europe.

Servotest was founded as a small engineering company in 1959 with strong defence industry ties. The company was taken over in 1978 by Derritron, which in turn had been deeply involved with GEC Ferranti and ICL when those companies were making their big push eastwards in the 1960s.

The prime known Soviet orders captured by Servotest include a £2.7 million high-speed data acquisition system based on two GEC 4070 computers, complete with four 40 Mbyte discs and a high-speed inter-processor link, for a Soviet seismic platform for earthquake simulation, and eight DBC-based servo-hydraulic test systems for dynamic/static fatigue and stress testing.

The data acquisition system was delivered to the Hydroproject Institute in Moscow, and the test systems, believed to average £3 million apiece, to the Mashpriborintorg buying agency for installation in Moscow, Leningrad and Riga.

Servotest is believed to have sold over 30 DEC PDP-11, 34, 70 and Vax-based process control systems to Soviet buyers in total, and its installation engineers made 20-plus trips to the USSR.

The director of marketing for Letchworth-based SK Computer Systems, John Maddock, says that his company opted out of sales to the Eastern Bloc "some months ago". "Licensing was becoming a problem, and the lengthy hold-ups were foreshadowing cashflow troubles."

He says the company sold four systems to Bulgaria. "Only a couple of them had to be referred to the Board of Trade, and I must say that the board was always very much on our side, but – the market was getting dodgy . . ."

SDL saves IBM's German blushes

by Donald Kennett

SYSTEMS Designers (SDL) has been recalled by the West German Bundespost to enhance the software it wrote for the Bildschirmtext viewdata field trial.

Developing and testing the IBM system, which was supposed to handle the full public service in time for the Berlin Radio Show in September, has been delayed until May.

The Bundespost had wanted the September date so that manufacturers could launch terminals conforming to the more elaborate display standard to be used with it.

A second GEC 4000 computer will run alongside the one used for the field trial, operating with software modified to support the new display standard.

Bildschirmtext chief Eric Danke says this week that the contract under which IBM was working contained penalties for any delays, but he could not say whether the penalty would cover the cost of SDL's work until the contract was completed.

Limited quantities of the new terminals are to be delivered to information providers in the next few weeks, but they will only be available to the public after the Berlin Show. Loewe Opta is the first company to announce a terminal, but more are expected from Blaupunkt, Grundig, Siemens and others.

Old-style terminals are to be supported on the field trial system, which will carry data converted from the full service, until the end of next year.

West German Post and Telecommunications Minister Christian Schwarz-Schilling has announced that the government will put an extra DM200 million (£77.5 million) into accelerating the spread of the Bildschirmtext network.

The Germans want it to provide local call access from anywhere in the country by the middle of 1985, instead of by 1988 as previously planned.

The display standard to be used on the full public service (in place of the Prestel display standard used on the field trial) is the one developed as a European standard by CEPT (the Conference of European Postal and Telecommunication administrations) in 1981. It is designed to combine the best features of the rival British and French systems.

RATCLIFFE . . . "It is high time we went our separate ways."

Universal sale hots up the Pick race

by John Riley

THE Pick race speeded up this month, when systems house Universal Computers Limited (UCL), created a new rival by selling off its subsidiary IDM. Both companies announced deals to market IBM machines with the Pick operating system.

Interactive Data Machines (IDM), formed by UCL last January to market the Pick operating system on IBM's Series 1 minicomputer, was sold off last week for an undisclosed sum.

In the same week UCL announced an agreement to market the IBM 4300 mainframe with Pick, and IDM announced an agreement to market Revelation, a Pick lookalike system that allows the IBM PC to communicate with any Pick-based system.

"We were unhappy with the Series 1 under Pick," said Alan Wilson, UCL commercial director, "so when we gained distribution rights to the 4300 from Ultimate Corp last week we decided to sell IDM. It was a buy-out."

Neil Ratcliffe, IDM managing director and formerly managing director of UCL Northern, commented: "While we are grateful to UCL for assistance in the days of IDM's formation, it is high time we went our separate ways."

UCL, which sells the Ultimate and Universal minicomputers which are based respectively on Honeywell DPS Level 6 and Digital Equipment LSI machines with the Pick operating system, recently moved down into the micro market. It's new Pick-like operating system Epick runs on top of the CP/M operating system.

UCL has also recently acquired marketing rights for US company Software Express' program generator. Software Express has developed a Pick applications generator called Appgen to build a bridge with the rival Unix system.

Visa network takes off

by Donald Kennett

VISA International is planning to quadruple the number of cash dispensers it expects to have linked together around the world by the middle of next year. This will enable anyone travelling abroad to draw local currency against his or her account at home.

The plan published in April projected 1,000 installations by mid-1984, but company president D. W. Hock said that due to the enthusiasm of member banks, the figure was more likely to be 4,000.

In the UK, Barclays Bank will start linking 600 dispensers to the network as soon as the technical standards are finalised. In the US, 41 financial institutions have since April agreed to take part, and another 200 have expressed interest.

Visa's international board of directors, which represents 14,000 financial institutions, earlier this month approved plans to start three major expansion schemes next month.

They are to implement the connections between members' networks, to install Visa's own network of 400 dispensers at airports, railway stations and tourist attractions; and to introduce the Electron card, which will have barcodes, OCR characters and magnetic stripes on them so that they can be read by the kinds of equipment that retailers are installing, as well as the kinds that banks have.

Visa UK development chief Roy Wilcox said the company had had to develop its own standards for the encryption of personal identification numbers, for other security measures and for the management of encryption keys, but in most other areas it had been able to use internationally agreed or de facto industry standards.

Equipment to be attached to the network can be bought independently by the member banks, local contractors and retailers, and more than 20 major vendors throughout the world supply suitable systems.

Nixdorf in software link with CSD

NIXDORF has linked with software house CSD to market a warehousing system. The Pincs system is said to cover all aspects of warehouse management from receipt of goods to final despatch, and runs on an 8870 minicomputer. Designed by CSD for supermarkets and wholesale distribution, it is written to be real time and interactive, to cope with a large volume of varied goods moving in and out of stock.

On their Marks

NCR has won a £3.5 million order to install a distributed processing network of NCR I-9010 microcomputers in all 262 Marks & Spencer stores by the end of the year. Two NCR I-9040 computers will call up the micros 12 at a time after closing time to collect all the stock replenishment orders within two hours.

Liquidator named

NEXOS Office Systems and two linked companies came under the control of the liquidator, following privatisation of the group's two main businesses last year. David Buchler of Arthur Anderson & Co has been appointed to dispose of the assets of the three firms.

Bank interest

COUNTY Bank has taken a 25% equity holding in IBM Systems consultancy Wilkins Computer Systems. Wilkins has helped to install more than 60 IBM systems over the last 3½ years and expects to turn over £1 million this year. County Bank's investment portfolio also includes Systime and Tycom.

MICRO NEWS

Honeywell opens Hemel aid centre

by Nuala Moran

HONEYWELL is setting up a micro sales assistance centre at its offices in Hemel Hempstead. It will provide a single focus for microSystem 6, Honeywell's break into the micro market, which had its UK launch two weeks ago.

Garry Young, Honeywell product marketing manager for mini and micro systems said: "The centre will accept orders direct from companies and will deal with enquiries from salesmen and OEMs."

Brian Long, Honeywell UK managing director, scotched the suggestion that Honeywell's late entry into the micro market meant lost sales. "We are not necessarily late, nor have we lost opportunities. The compatibility of microSystem 6 with the rest of Honeywell's range means our timing is just right."

The company is aiming microSystem 6 at the top end of the personal computer market and the business/corporate market.

Keith Manning, director of product marketing, said: "The corporate micro area is by far the biggest growth area."

He believes that so far there has been uncontrolled growth in this area because of incompatibility – a problem which microSystem 6 claims to overcome.

It looks as though Honeywell came round to the idea of entering the micro market because of pressure on 16-bit mini sales from the 16-bit micros.

Honeywell sales of DPS-6 minis doubled between 1981 and 1982, and 1983 sales are already ahead of 1982. But Young said the bottom end of the mini range was not selling as well as the rest of the range because of competition from micros.

It was emphasised that Honeywell is not trying to sell to the first-time user small businessman. According to Long some customers see the potential for 100 units.

At present there are 20-30 active dealers who will be adding microSystem 6 to their products.

LONG . . . "We are not necessarily late."

Rank to stay in the computer market

by Nuala Moran

RANK XEROX intends to stay in computers. Michael Winkler, manager of advanced systems for Rank Xerox, said last week that the company is making "continuing progress and commitment to the computer market".

It will spend £1 million on advertising in this area next year, he added.

A multi-million pound contract for Zerox 820 II microcomputers placed by a leading British organisation was to have been announced last week, but details were not completed in time. But there was a UK announcement of compatibility of the 820 microcomputers with the Ethernet local network, and new software packages for the 8010 executive workstation.

Ethernet links equipment within and between offices and can carry information from one location to another at rates of up to 10 Mbytes per second. Xerox has introduced the Shared Interface Unit (SIU) which connects two Xerox 820 II micros to be connected Ethernet. The SIU uses two industry standard RS232 C/V2.4 ports.

A user can either connect the 820 II directly to an SIU port, or through modems over telephone lines.

The SIU will cost about £634.

A collaborative venture between Xerox, software specialists Visicorp and 3Com Corporation the US networking specialists, was announced recently. This will allow users of IBM Personal Computers equipped with VisiOn software to have direct access to services on an Ethernet.

SMITH . . . "We are crossing a minefield."

Apple marshalls Lisa's Euro houses

by George Black

APPLE'S Lisa developers are on tour of Europe, organising software houses to provide applications which will sell the machine to users.

The controversial "mouse"-driven micro, unveiled in January, is now only a month away from public release. Already its inventors are claiming huge advance orders – more than double their forecasts, according to software manager Bruce Daniels.

Manufacturing capacity has been quadrupled, to bring the Cork production line on by September instead of next year, and upping output from California and Dallas.

But probably the crucial test for the Motorola 68000-based Lisa is whether Apple can persuade the applications writers to give the support it will need to compete with the IBM and DEC personal computers for a dominant place in the market. Though Apple points to the continuing high sales of Apple II, no one denies that the prosperity of the $583 million revenue company during the Eighties rests on the success of its gamble to go up-market. Lisa has cost $30-$50 million to develop and has taken almost four years to reach the shops.

"We are crossing a minefield. It's a high risk strategy, but we believe it will pay off," said marketing manager Barry Smith.

What came into sharp focus on the first day of the tour was that Lisa is the base of a range which is not expected to make its greatest impact until the second half of the decade.

Smith hinted that a slimmed version – maybe derived from the forthcoming Macintosh – would be marketed by 1985.

While this could cost about half the present $10,000 product, other enhanced models could also be introduced. In this way they hope to dispel early doubts about the price tag.

In London the team drew in some 25 firms interested in collaboration, including Hoskyns, Intelligence UK and Micro Focus, whose Level-11 Cobol is already implemented. In France they are talking to CAP-Gemini-Sogeti and in Germany to SBS.

Apple's plans to attract more software houses have been clarified with details of its Workshop, coming in August, and Toolkit, available late this year or early next. The Workshop includes Pascal, Basic and Cobol compilers, next year extended to C and Fortran. Toolkit is designed to speed up programming with devices like Classcal, a new superset of Pascal. These will be added to the initial bundle of graphics, spreadsheet, database manager and word processor.

ITT puts its muscle behind Z80-based business machine

by Donald Kennett

ITT Microcomputer Systems still has great hopes for the Z80-based 3030 business machine it launched early last year to replace its 2020 Apple-lookalike.

Deafening silence may have filled the space between then and now, but the company has been preparing to put its massive marketing muscle into changing this.

Three developments announced for the system at the Business To Business show earlier this week are designed to broaden its appeal, as well as proving the Lego-like basis of its construction. But according to Dr Paul Gardner, who was brought in to head the operation in June 1982 after its false start in January, it is the completeness of the package offered to dealers that will make it a market success.

The package includes documentation, dealer training, national and specialist press advertising, and the ability of the machine itself to fit a wide variety of applications.

"I think the relationship between supplier and dealer is as important as the one between dealer and user," Gardner said. "We held our first dealer conference about five weeks ago and there was a lot of interest and very few complaints. We were surprised."

The system had a quiet relaunch in February of this year and about 100 units have been sold through about 20 dealers. Gardner plans to build up to about 80 dealers by the end of the year. The head office team which supports them has grown from four to 13 since last June and will be 20 by the end of the year.

Central to the machine's capabilities is its upgrade path. The company offers module exchanges to take it from 64Kbytes of RAM to 256Kbytes and from 280Kbytes to 560Kbytes floppy disc drives.

In August it will launch a processor module exchange that will take it from eight-bit to 16-bit operation and this week it launched a single- to multi-user upgrade. Winchester disc drives with capacities of 7Mbytes and 14Mbytes are available now and 10Mbyte and 20Mbyte drives are due soon.

"But if the software can't follow it without perturbation to the user, it's no good," Gardner said. "So that's what we've looked at and that's what's taken time – ITT stands for it takes time."

The multi-user upgrade involves a serial interface circuit board that enables the machines to be daisy-chained and a change to the multi-user version of MPSL's BOS business operating system, MBOS, which is invisible to the user. The machine is also available with CP/M, but Gardner says this cannot support the upgrade path in the way that BOS can.

This week's announcement in BOS software is a costing and estimating package for printers. The company now plans to follow this with a new vertical market product announcement every five weeks.

The third development launched at the Business To Business show is a 14Mbyte cartridge tape drive for Winchester back-up. This enables small businesses to do their data storage housekeeping effectively, Gardner said.

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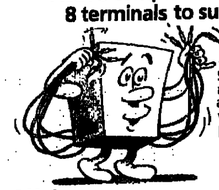
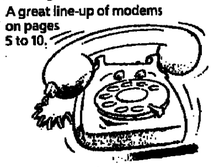


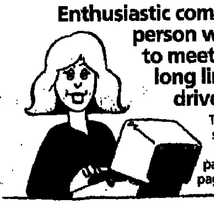
Statistical multiplexers are ready and waiting on page 14.

Data expert wishes to lay it on the line

A great line-up of modems on pages 5 to 10.



Enthusiastic computer person wishes to meet long line drivers



There's a selected range parked on page 11.

- Modems
- Multiplexers and Concentrators
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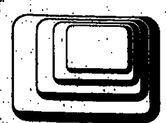

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COMPANY NEWS

Runaway Racal is run down in City

IN post inflationary times a profit growth, year on year, of 11.35% would not seem bad, yet the City men marked down Racal's shares by 40p to 510p after hearing the latest 11.30% profit rise.

Perhaps it was predictable, given the excessive expectations that the City has long had about Sir Ernest Harrison's go-go company, that there should have been a certain amount of "adjustment" as a more normal pace of growth overtook the zappy electronics giant: Racal has pushed its turnover in 10 years from £37.3 million in 1973, to £763.5 million now.

While the brokers ask themselves whether Racal has plateaued after its headlong charge through the seventies, the company continues to put on massive volume.

Sales rose from £643.9 million in 1982, to £763.5 million in 1983, an 18.5% jump that added £120 million to Racal's turnover in the middle of a recession.

Within the global sales figures there has been some shifts in the make up of the turnover. The Data Comms division's business rose from £180 million and 28% of turnover, to £244 million and 32% of overall sales.

Radio Communications, which the company expects will contribute an additional £300 million from cellular radio in the nineties, slid in percentage terms from 28% and £180 million last year, to 25% and £190 million in 1983.

Other percentage and volume figures showed a drop of 2% as a share of the overall figure for marine electronics.

This activity, which includes the Decca chain of radio navigation stations turned in £83.9 million in 1983, compared with £83.5 million the previous years.

Racal has made plain its intentions of pursuing legal and other action against manufacturers who make devices which work off the navigation signals transmitted by the stations which cost Racal £70 million to install.

The company has been plagued by cheap Taiwanese and Far East based suppliers which are entering the small boat navigation business on the back of the Racal service.

Since the beginning of the year Racal has laid off 600 workers at its Florida modem factory.

According to the company the problems there were caused by an inadequate accounting system which led to overstocking of finished goods and an "over employment situation".

The "situation", as the company so opaquely put it, has been all too obviously rectified while the accounting system and its former head have been replaced.

But the current order book is strong and Nick Measham, the computer industry analyst at brokers Laurie Millbank, reckons that the gloom has been overdone.

HARRISON . . . Has his go-go company plateaued?

ICL sticks with its stricken Mitel

IF one stands in the Silicon Valley sophistication of Mitel's new Welsh factory and watches the SX 2000s and the SX 200s being assembled and shipped, it is hard to visualise the ses of troubles besetting the company.

Yet beset it is with its share price suspended on the New York Stock Exchange at $8 and analysts beginning to forecast a loss for the coming quarter.

The most damaging blow to Mitel recently was IBM's decision to invest in Rolm Corporation. Rolm is a competitive supplier of telecommunications equipment. Mitel's instant reaction to the announcement was to quit the agreement in principal under which the Canadian minnow and the American whale were working to produce a fully softwared SX 2000 (ICL's DRX 2000).

Apparently there was little option for Mitel but to end the arrangement, despite the appearance of unconsidered haste conveyed by the speed of the pullout.

ICL is sticking with Robb Wilmot's statement at the end of April that the company is not going to abandon the Mitel deal. One major City of London stockbroker, Phillips and Drew, has already cancelled its Mitel/ICL order in favour of the Plessey IDX, and a number of other orders have gone the same way.

ICL's willingness to hang on in with Mitel is based on the widely acknowledged excellence of the Mitel hardware, and the real prospect that once the delay is ended, the final product will be a winner.

US analysts have rated Mitel shares a buy recently, and the company is deploying considerable software resources of its own to the DRX.

Amdahl calls on investors

AMDAHL Corp, with its shares at an all-time high of $60, has chosen this suspicious moment to dip into the coffers of investors for a cool $50 million.

The object of the fund raising is to boost cash as the company's new 580 series mainframes gather steam in the market place.

Since the start of the 580 delivery season in the spring the company has drawn heavily on the credit arrangements with its banks, and will use the proceeds in part to repay this debt.

Ferranti profits are smack on target

FERRANTI, like a ferret true to form, brought in results that were smack on the nose of City expectations.

Profits, at £31.5 million, were a little up on the best forecasts made by the computer industry watchers in London, but represented a 32% hike on the previous year's £23 million.

Turnover at £372 million was 21% up on the previous year and the order book for the current year is already 20% up, setting Ferranti nicely in line for a surge towards £425 million in sales next year.

Analysts are suggesting a profit of £40 million for 1983/84. The sharpest performer in the Ferranti stable was the electronics division, where turnover rose from £36.3 million to £52.1 million with profits showing a similar take-off and rising from last year's £4.3 million to £6.4 million.

According to group managing director Derek Alun-Jones much of this improvement came from rapidly rising production at the Chadderton wafer fabrication plant, which recently doubled capacity by bringing new facilities onstream a year early.

The semi-custom chips produced at Chadderton, in which Ferranti holds a world lead, are used in such well-known products as the Sinclair ZX80 and the Nikon camera.

Indications from Ferranti about Chadderton imply that turnover in this area could rise by 50% or more in the current year, with profits going up a similar amount.

The computer division, which is beginning to show signs of becoming adventurous in marketing not always evident in the past, is using the inhouse product in the highly successful personal micro the company is now selling in volume.

A lot of public attention was focussed on Ferranti at the time of the Falklands war when Ferranti electronics played a major role in various British successes there.

Alun-Jones noted that the Falklands war had led to a big increase in worldwide interest in the company's products.

WOOD . . . Good news.

BTG expects the unexpected

SIR Frederick Wood of the British Technology Group should announce its annual results much better than expected, mostly due to the success of Newbury Data.

The Newbury Data operation, which Incorporates the old Data Recording Equipment Company and Newbury Labs, as well as the revamped United Peripherals operation in Winsford, has been under intensive treatment by a new management for over two years. The company is now forecasting a £2 million profit for the remainder of this year.

For the year to May 1983 turnover at the merged operation rose to £44 million, from a previous year's £28 million.

For the remainder of 1983 a spokesman for Newbury Data says that the company will substantially exceed its target of £44 million.

Observers suggest that £50 to £55 million is now the management goal.

The improvement in Newbury Data's performance is likely to advance the probable privatisation of the company.

To continue the take up in spare manufacturing capacity at Winsford the company has entered a series of disc manufacturing deals in the US.

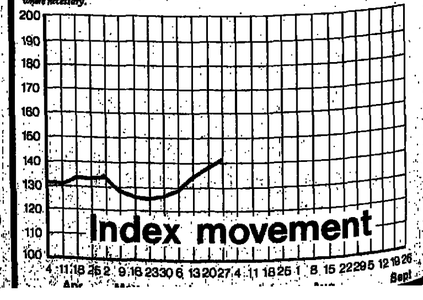
SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Data 24/6/83 Index 142.22 Change +0.11

Pence		London Stock Exchange	Pence		$		US Stock	$	
1983					1983				
High	Low	Stock	Price	C'nge	High	Low	Stock	Price	C'nge
900	340	ACT (App Comp) (25p)	660	+ 3	38	18½	Amdahl	27½	- ½
68	41	B. Sys Elect (50p)	52	+ 3½	60	28½	Apple Inc	43	- ½
195	124	Chubb (20p)	153	+ 28	35¾	24¼	Auto Data Pro	31½	+ ¼
178	135	Data Sciences (25p)	138		61¼	31¼	Burroughs	48½	+ ¼
228	162	CASE (20p)	226	+ 38	18	11¼	Comp Auto	15½	+ ¼
228	162	De La Rue (25p)	228		18	12	Comp Sciences		
332	264	Intnl (25p)	323	+ 18	23¾	16	Cromchem	20	+ ¼
360	211	Logica (50p)	358	+ 18	68½	37¼	Control Data	48½	+ ¼
248	182	GEC (50p)	238	+ 18	68½	37¼	Dev Research	48½	+ ¼
94	68	GEI (25p)	87	+ 7	57½	31¼	Data General	51	+ ¼
56	41	Kalamazoo (10p)	56		57½	31¼	Datapoint	51½	+ ¼
278	216	Kode Int (25p)	260	-	127½	68½	Digital Equip	98½	+ ¼
170	118	Metal Box (10p)	150	-	68½	37¼	Elec Data Sys	48½	+ ¼
156	144	Muirhead (25p)	152	- 3	19¾	9¼	Gen Automation	10½	+ ¼
480	400	Prmarket (1981) (50.05)	480	+ 31	68½	37¼	GRI	48½	+ ¼
2000	907	Racal Data	2000	- 100	51	26¼	Harris	26¼	+ ¼
255	215	Office & Elect (25p)	255	+ 15	74	38½	Hewlett-Packard	58½	+ ¼
1237½	710	Philips Lamp (F1 10)	1237½	+ 62½	122½	68	Honeywell	122½	+ ¼
703	538	Plessey (50p)	764	+ 38	122½	68	IBM	122½	+ ¼
50	32	Quest Auto (10p)	38	-	37¼	24¼	Litton Ind	30½	+ ¼
564	418	Racal Elect (50p)	508	+ 38	122½	68	MDB (Mohawk D)	98½	+ ¼
413	225	Redifusion (25p)	413	+ 18	68½	38	MBA (Mgment Sol)	38½	+ ¼
288	235	Sec Comps (10p)	288	+ 18	68½	37¼	Magnetic Peripl	48½	+ ¼
480	276	Systems Des (10p)	480	+ 30	18	9¼	McAuter	10½	+ ¼
480	418	Thorn EMI (50p)	480	- 10	124½	68½	Motorola	74½	+ ¼
177	135	UCRT (50p)	144		80	39¼	National Semi	51	+ ¼
		United Scientific			124½	68½	NCR	74½	+ ¼
128	78	Sci Comp (10p)	128	+ 8	34	19¼	Perkin-Elmer	26½	+ ¼
148	118	Sirius (10p)	148	+ 3	68½	38½	Prime	51½	+ ¼
218	148	Comput (Cptr) (10p)	180		68½	37¼	Raytheon	48½	+ ¼
180	168	Comput Tech (25p)	177	+ 4	38½	23¼	Sperry	30½	+ ¼
68	27	T & D Comp (5p)	48	+ 3½	68½	37¼	Sperry Comp	48½	+ ¼
75	51	MK.T (5p)	75	+ 3½	38½	19¼	Storage Tech	23½	+ ¼
240	160	Memory Comp (R10p)	240	+ 14	68½	38½	Tandem	51½	+ ¼
360	208	Micro Bus (10p)	357	+ 17	60¼	30¼	Tandy	110	+ ¼
360	208	Micro Focus (10p)	360	+ 17	124½	118	Texas Inst	27½	+ ¼
396	316	Micrologic (10p)	396	+ 16	38	18	Tymshare	26½	+ ¼
208	168	Norcros (25p)	208	+ 2	41¾	24¼	Wang Lab B	18	+ ¼
211	168	NMW (£1)	211	+ 2	17	8½	Wang		
81	61	Sage Group (10p)	81						
192	110	Scan Data (10p)	180	+ 16					
70	62	Trident Comp (10p)	62	- 2					
105	68	Zygal Dyn (5p)	105						

The table shows the closing prices in London on Friday and in America on Thursday. The Share Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.



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To get everything out of the database that you've put into it, the answer is software.

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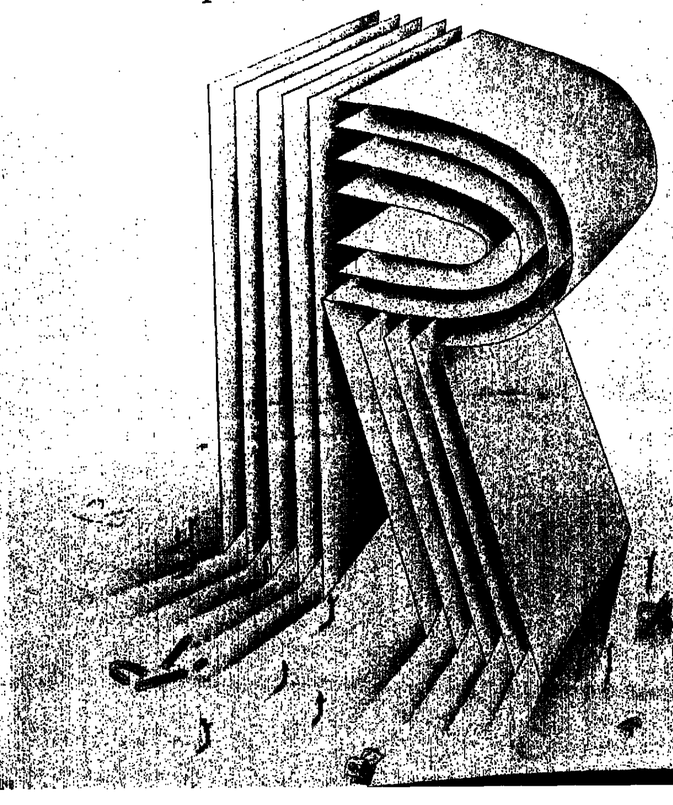


Cullinet

Cullinet Software Ltd., Cullinet House, The Broadway, Stanmore, Middlesex HA7 4DQ. Telephone: 01-954 7333. Telex: 8951901.

SOFTWARE FILE

Visicalc authors go it alone

by Claire Gooding

THE company that wrote the world-famous Visicalc spreadsheet is to go it alone with a dynamic follow-up. Software Arts, the original author of Visicalc, is selling the second generation version, TK!Solver, without the mighty marketing clout of Visicorp.

Visicalc was a phenomenal success, and became the "standard" spreadsheet application on eight-bit machines.

Its authors, Bob Frankston and Dan Bricklin, could not interest anyone in it originally, and it was not until Day Fylstra Personal Software took it on that the product became hot property. Personal Software became one of the giants of the US software industry, and changed is name in 1981 to Visicorp to reflect the string of products triggered off by Visicalc.

This time around Software Arts is not going to share the spoils with anyone. TK!Solver was launched in London last week with enough razzamatazz to convince the world that Software Arts has learnt a thing or two about marketing. Founded three years ago by Frankston and Bricklin, the company now has a $4 million turnover.

"The pattern of the industry has changed," explained Software Arts president Bob Frankston. "These days it's along the lines of manufacturing, where the originators supply goods in volume and then support them, rather than in the early days of 'software publishing'.

"Feedback from users is a vital part of support, so it is more sensible to link programming with marketing more closely."

TK!Solver is at worst a more dynamic version of Visicalc and at best, to quote US publication *Byte*, "a quantum leap in software" – a phrase liberally re-used in Software Arts' aggressive sales campaign.

The product costs £289 in the UK as opposed to the $299 US price, and is sold here by Marketing Micro Software of Ipswich.

TK!Solver sticks to the basic spreadsheet technique of rows and columns, but otherwise departs from the Visicalc mould. It leaves little for the user to do but enter the equation on one part of the screen, and the value of some of the variables on the "table" part above. It has been designed for simplicity of use: one keystroke, the "!" of TK!Solver's title, gets the results of a calculation.

The "TK" part of the name refers to the Tool Kit underlying the product. This clever set of programs allows the user to turn an equation on its head and treat any part of it as the "unknown" quantity.

Other unusual qualities are the ability to change values automatically by treating different measurements (pounds, dollars, or kilometres and miles, for example) as units; and "iterative solving", by which the value of an unknown quantity can gradually be guessed at and gradually adjusted.

Software Arts has not been able to protect TK!Solver from the plagiarism that dogged Visicalc, except by giving it thorough documentation, which, according to Frankston, will be little used once people get to know the product, but does much to establish its unique style.

Software Arts is aiming the product at anyone who uses equations. According to marketing and sales director Bruce Rampe this includes personnel and accounting people as well as the traditional Visicalc targets of scientists, engineers and statisticians.

"Everything is an equation, a relationship between variables; it's just that we don't think of them like that," he said.

To attract particular "vertical market" users, TK!Solver is backed up with a number of books called Solverpacks, which provide, for £106 each, all the standard equations used in electronic and mechanical engineering, basic science, architecture and financial modelling. The books are published by McGraw Hill and the range continually updated.

Software Arts has not yet tailored the product to the UK market to the degree of providing a £ rather than a $ sign, but, says Rampe, such details are far outweighed by the advantages TK!Solver can offer UK users.

FRANKSTON and BRICKLIN . . . Visicalc authors are out on their own.

Program lets systems be tailor-made

MICROSOFTWARE house Holland Automation is taking parameterised programming one step further to produce tailor-made systems for end users. Holland has released an implementation program that will ease the design and installation of systems as specified by the users themselves.

The program uses a question and answer technique to front-end Holland Automation's range of business and accounting packages, which are already parameterised. The user is guided through the facilities available and selects those that suit his particular business best. The Implementation Program will be part of the kit offered to new dealers.

Thumbs down

UNIX and MS-DOS have had the thumbs down from ABS, which has picked Digital Research's MP/M-86 operating systems for its new 16-bit Orb series. "We looked at various operating systems," said ABS OEM sales manager Bernard O'Leary, "and we decided that MP/M-86 was the best for a real multi-user, multi-tasking system. We haven't ruled out the possibility of implementing MS-DOS and Unix later."

Peachtree pack

PEACHTREE, the MSA subsidiary, is to collaborate with Sheffield Micro Information Systems to produce a package for manufacturing industry. The software, written in CIS Cobol, will combine Peachtree's business management system and accounting modules with Sheffield's inventory and production control modules.

Natural grows

ADABAS Software, the UK subsidiary of the West German Software AG, has broadened its range of products based on the Natural programming language. Three new additions are a database protection system, support for VSAM files under MVS and DOS/VSE operating systems, and a graphics module.

Control IMS

BOOLE and Babbage, the Californian IBM systems software house, has come to the aid of IMS database users with a new control package. The IMS management facilities (IMF) were written by consultant Tom Bird, chairman of IBM US user group Share's IMS advanced features committee. IMF is a system troubleshooter and forward-planner which Bird claims takes the guesswork out of IMS.

NCR's finance

MANUFACTURER NCR has plumped for one of the best-known financial modelling packages as the standard offering on its kit. The FCS financial modelling package, from UK company EPS Consultants, will be marketed jointly worldwide by the two companies for NCR's V-8500 large system family. NCR is also offering a different financial modelling package for its smaller I-9000 range. Written by South African software house Total Computer Systems, the Deskcalc package is said to have more features than a micro package.

React to sums

A REPORT Evaluation and Calculation Tool, REACT, has been launched in the UK by MAI for use on its Basic Four business systems. The report generator package is said to be for non-data processing staff, and allows them to produce reports involving row and column calculations.

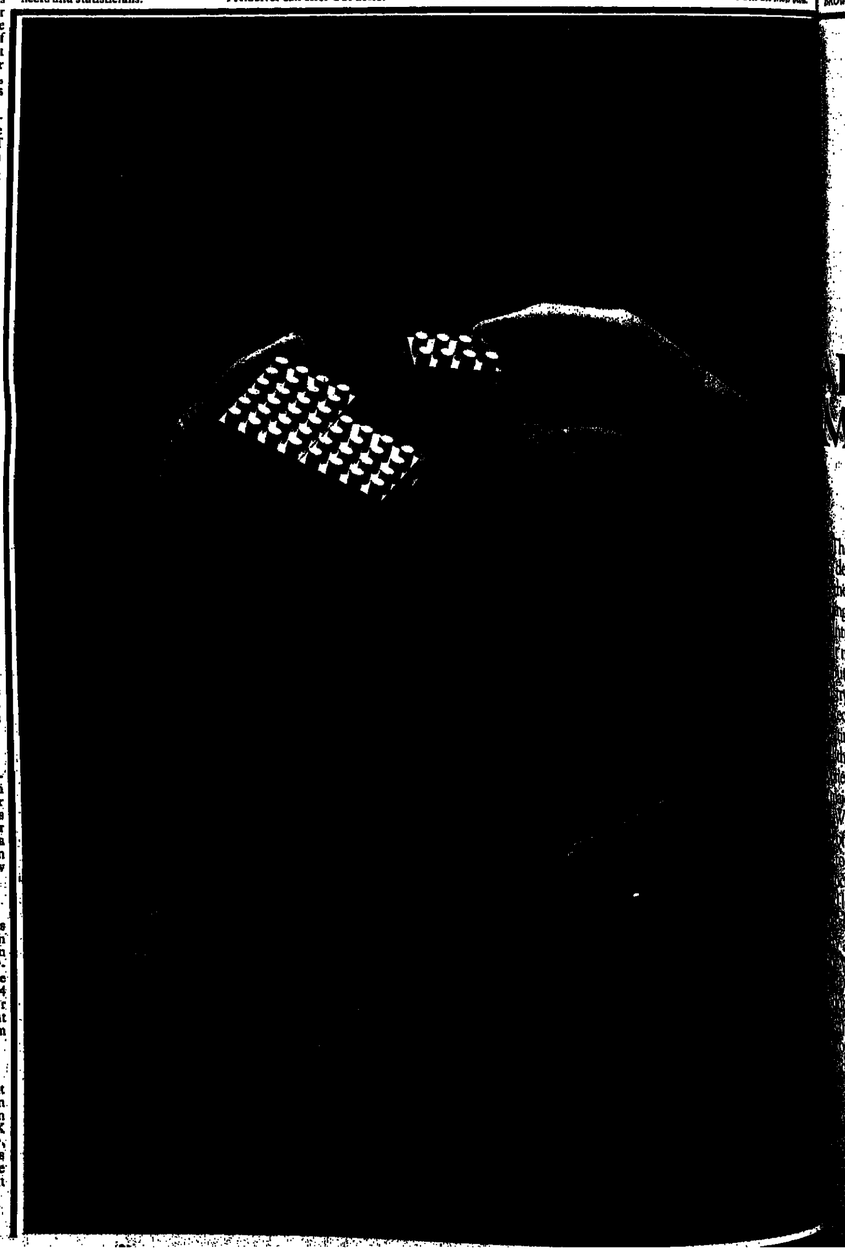
Take alarm

SYSTEMS Designers of Fleet has won a £350,000 contact from British Telecom to provide an alarm handling system for its international switching centre. The system, based on DEC PDP11/24 minicomputers, will monitor 10,000 alarm points and present status reports on the transmission equipment on colour terminals.

Track convert

TRACK-50 project management software, which scored a hit on IBM and Prime minis, has been converted for use on DEC VAX 32-bit machines by its originator, T&B Computing of Michigan. It is being launched as Track-70 by the Canadian Sydney Development Company.

Software File is compiled by George Black



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SOFTWARE FILE

Brownlee wants accountants

by Claire Gooding

EX-CHAIRMAN of Altergo Software David Brownlee is leading an assault on the heavies of the accounting industry at the head of a new financial software firm.

US company Walker Interactive Products International is setting up in the UK to market its online real time accounting packages. Walker will sell to IBM users across the entire IBM range, in direct opposition to MSA, McCormack and Dodge, and UK-owned firms like PPL and NSC.

The 180 strong company claims to be the fastest growing supplier of financial applications in the US, where it has 300 installations – a 180% jump in sales in the last year. As yet there are no users of Walker's online packages in the UK, but the new subsidiary is out to replace "outdated" batch applications from better-known suppliers like MSA.

Brownlee left Altergo last Christmas, several months before the company crashed in April, and was immediately contacted by Walker, which had never been represented in the UK. Walker's US president Richard Courier, previously head of Altergo's US operation, persuaded him to lead Walker's invasion of the UK, Europe, and the Middle East.

Brownlee's standing in the software industry puts some weight behind Walker's entry into an already crowded market. UK users have proved unreceptive in the past to the message that online, real time software is necessary for accounting, but so far there has only been one other company – Northern Software Consultants – preaching the real time gospel.

According to Brownlee, Walker is the only supplier to offer a truly integrated set of packages with common data and user interface conventions used across the suite.

There are four packages in the first European offering, II/GL general ledger, II/AP accounts payable, II/MM materials management, and the II/PO purchasing package. There is no firm release date for the II/ARC module for accounts receivable and credit control.

Walker's packages are backed up with a set of software tools called Strategic Software. The productivity tools within the SS suite are dubbed "Personalisers" because they allow users to tailor the basic packages to their own needs.

"A user can customise as he wants," said Walker vice president Mike Barton.

"They can build their own screens, set up online enquiries, generate reports and document their personalised software.

"The other advantage we have is the Software Bridge part of Strategic Software suite. It can run one version of the application under any IBM operating system."

MSA's stance is that real time facilities are at the bottom of it's users' lists. "If real time applications had been all that important we'd have had 8,000 users screaming at us by now," said MSA UK director Stuart Walsh.

BROWNLEE . . . Landed on his feet with Walker.

Digital works on a Lisa competitor

by Martin Banks

FOLLOWING smartly on its support for Visicorp's Vision multiple screen operating environment, Digital Research is now working on the development of one of its own, and it aims to make it even more of a "desk-top analogy" than either Vision or Apple's Lisa system.

Speaking in London last week, Digital's vice president of Advanced Product Development, Tom Rolander, intimated that a new window-manager product to be called the User Interface could be expected by early next year, at the latest.

The Interface is being developed to work with the Concurrent CP/M to give a graphical display of what is happening with the different processes this multi-tasking operating system is handling.

Full details of its capabilities are currently not available. "We have yet to get it to the Beta test stage," Rolander stated, while seeming confident that it could be launched by the end of this year.

A key feature that Rolander says will be incorporated in the Interface is the ability to have direct, on-screen communications between different tasks. This would make, he feels, a much better analogy of a working desk-top than has so far been achieved by window-oriented systems.

The way Rolander sees it working is that two tasks would be displayed by the User Interface side by side on the screen. This would correspond to someone having two pieces of paper next to each other on a desk. Where data had to be transfered from one task to the other, the system would perform the job automatically.

This would involve the use of the essential physical complement to a window manager, a mouse, which the User Interface would monitor and control. This, he feels becomes a much closer analogy to the desk-top, for by pointing to the data of one task with the mouse-directed cursor, and then pointing to the new location in the other task's window to effect the transfer, it is much more analogous to manually copying direct from one document to the other.

Current methods of performing this task using computers generally involve writing the data away to disc in a new file, and then calling that file back into the other task – analagous to writing out the information on a seperate piece of paper that is ultimately thrown away.

The news about the User Interface comes as the competitive spirit between Digital Research and its arch rival Microsoft continues to wax strong.

Despite the fact that it was Microsoft that won the deal to produce the standard operating system for the IBM PC, Digital Research claims a greater number of long term OEM contracts with other 16-bit manufacturers.

It is also claiming that the Interface's host operating system, Concurrent CP/M, is about to bring forth several new applications programs for the IBM machine.

Home users beat US schools to education

HOME use of educational software is outstripping its introduction into schools, a US survey says.*

Senior American politicians of both Republican and Democratic parties have been advocating a massive spending programme on educational software, but it is parents buying for their children who are fuelling the expansion most.

Combined sales in both market sectors are likely to reach $1.59 billion by 1990, it is predicted. Dealers and distributors have been attracted by the entry into the field of newcomers like Xerox Educational Publications and Spinnaker Software.

But Michael Killen, president of Strategic Incorporated in California, which carried out the new survey as a follow-up to its inquiry of two years ago, says there are now too many trying to play the game.

"Some don't have the staying power or the professionalism to survive and there are already signs of shake-out here, as there before in the video game

Killen commented gloomily.

Parents are prepared to spend $500 on a good program if it meant that their children would develop faster, he said – whereas schools had been held back by the recession.

**Educational software: the next boost to the microcomputer market*, published by IPI, Nordre Ringvej 201, 2600–Glostrup, Copenhagen, Denmark, 130 pages. $970.

BN . . . "Signs of shake-out."

PLATFORM

Nick Measham and Patrick Hickey are industry analysts with Laurie Milbank.

Why the Telecomms Bill needs to be redrafted

TORY victory means that plans to privatise British Telecom will continue apace. The Telecommunications Bill has very high priority and the sale of BT to the private sector will be a boost for Britain's telecomms industry. However, there are still big problems to be resolved on how to float and regulate an £8 billion corporation (GEC, currently the largest electronics company has a market capitalisation of over £6 billion).

If the government does not redraft the existing Telecomms Bill, then BT will slip into the private sector with little regulatory or competitive restraint. This may not matter unduly to telecomms equipment suppliers, who can supply BT as well as compete head on with it. But it will matter to network providers such as Mercury Communications or the Racal cellular radio consortium and for those companies which intend to provide so-called value-added network services (VANs) using trunk communications links or cellular radio. VANs operators already mumble about unfair treatment from BT.

The fundamental point of privatising BT is to create competition by rolling back monopoly, not merely to honour a political pledge with expediency

America's AT&T provides perhaps an unfortunate precedent. For the Federal Communications Commission (FCC), with all its slick lawyers, could never win in the struggle through AT&T's accounts. Though private, AT&T remained a powerful monopoly almost above the law, and only decided to demerge when the business climate suited it.

By the same token, privatising BT as the Bill now stands amounts to transferring a public monopoly into a private one without even the restraints imposed by the FCC.

There are three main considerations: one is to weigh up the best means of floating a huge issue; the second is to beef up the powers of the new Office of Telecommunications (Oftel), which the Bill has created to regulate and oversee the telecomms industry; the third is to create more competition for BT.

Although the privatisation of BT might be regarded as an equity issue, its sheer size would swamp the institutional demand for equities. The total valuation of GEC is £6.5 billion and equity issues throughout 1982 were under £2 billion. Thus 51% of BT with a valuation of some £4 billion causes a big problem. As a straight equity issue, the City could not digest it without a liquid laugh.

However one can clearly see that this will not be a conventional issue and may have to be sold on the basis that it will replace a substantial tranche of government borrowing. In this case, the nature of the stock to be issued might be more related to a fixed income or variable income stock rather than to a conventional equity issue.

The government will probably also want to involve a wide public participation and various innovative financing possibilities, including telephone sales, will surface in this context. Existing telephone subscribers might, for example, be able to obtain some discount or reduction in their telephone account in return for holding an investment in BT.

Some guide to the type of performance that might be expected from BT is provided by looking at AT&T. Currently, AT&T has a P/E that is only some 60% of the market average, but its yield is double the average. This makes the prospect of a high yielding income stock look a likely bet.

Once floated, however, the issue of regulating BT remains. Oftel should be empowered to offer legal redress to any victim of BT's pricing policies or any other unfair parctices. Oftel should also license any company which wishes to compete with BT in any of its existing or future markets. It is quite wrong that the duopolies of BT and Mercury in trunk communications and BT and Racal in cellular radio exist on bureaucratic grounds.

It may be that the British telecomms market will only cope with duopolies, but economic forces, not government ministers, should be allowed to decide.

The fundamental point of privatising BT is to create competition by roilling back monopoly, not merely to honour a political pledge with expediency.

With competition, Britain's telecomms industry will flourish, without it, it will languish.

Nick Measham and Patrick Hickey

PROFILE

From Dad's eel and pie shop to the boardroom

RAY FORTUNE has come a long way from his Dad's eel and pie shop to first English vice-president of an American computer corporation.

He got the job three years ago, just as Data General was about to undergo the reorganisation which changed it from a medium-sized, technically-oriented hardware maker into a major international marketing company.

"It was a Herculean task – bloody hard work. But it had to be done if we were to come through," he said. Now he is responsible for 1,600 staff covering DG's operations in Europe, Africa and the Middle East.

Fortune went to grammar school and on to London University with maths and science A-levels, but dropped out of his chemistry course there after only a week. A mixture of restlessness and immaturity was responsible for this, he says.

He learnt how to sell by beginning with ice cream for Wall's.

One day in 1962, walking down Baker Street, he passed Burroughs' shop window. He didn't know what they did – but noticing an advertisement for a salesman, went in and talked to them.

by George Black

"Burroughs gave me a good training. I learnt how to program in several languages and how to sell accounting machines."

After five years he moved to Honeywell, selling its 200 series to the City.

When Honeywell and General Electric merged their computer interests at the start of the 1970s he took charge of selling the larger GE machines, with a team of nine under him.

Control Data took him on as sales manager in 1974 in an abortive effort to penetrate the commercial data processing field, but there was not the software to back up the power of CDC's machines.

A year later Data General – still a relatively small outfit with only 3,000 staff and an $80 million annual revenue – gave him his big break. He became its European sales director and moved with his family to Paris.

Data General president Ed de Castro had realised they had to change the way they did business. The company was not giving enough support to customers, was selling but not marketing, was too obsessed with technical excellence, and too dependent on OEMs.

To make things worse, it was saddled with a world recession and a strong dollar upsetting trade.

Many of those who planned DG's transformation left during the process because they did not want to be part of a vast and structured company. They went on to their own start-up ventures. But Fortune had grown up in big firms and believed that a combination of enterprises and structure was not only possible, but mandatory.

"We have tried to set up a large structure consisting of a lot of small projects – the units are as large as necessary, but as small as possible."

Fortune has been one of the key men behind Data General's change of direction from depending on OEMs to serving end users.

"Customer satisfaction is not the most important thing – it's the only important thing. I'm not saying the customer can't be wrong, but if he is it's up to us to tell him why and what he should do instead."

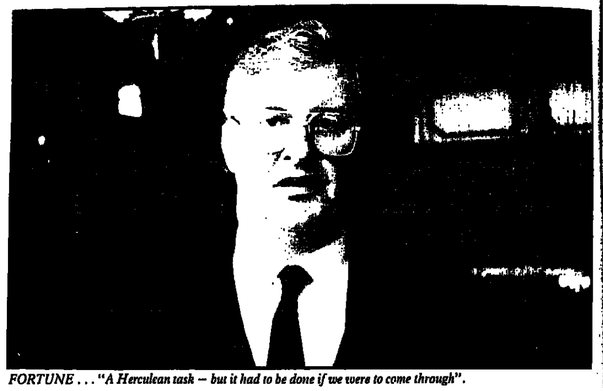
He sees the 32-bit supermini market as likely to boom just as much as the micro market. Digital is still a clear leader in the field, but DG aims to be number two.

Fortune claims they have a third-share of the unshipped backlog of 32-bit superminis and a technical lead with the the MV10000 machine. This position can only be maintained, he says, through ploughing 50% of the research and development expenditure into software and by ensuring that the firm keeps up its one semiconductor facility.

At 43 he is happy to live abroad – though he misses his three children who are at English private schools – but is sure he will eventually come back to settle in England.

Meanwhile he has created a little bit of England at his cottage in Normandy – a typically English rock garden.

"The neighbours think I'm crazy of course, but it keeps me happy and stops me getting homesick."



FORTUNE . . . "A Herculean task – but it had to be done if we were to come through".

DOWNTIME

Here beginneth the book of Cadcam . . .

IN the beginning was Computervision. And Prime, and Compeda and CIS, and the CAD Centre, and a few others. And it came to pass that Computervision coveted Compeda.

But the High Lord Baker spoke and pronounced that never would the proud Compeda fall to the dark powers from the land which some named America.

And it came to pass that the High Lord chose to forget his decree, and gave up Compeda, even unto the hands of Prime. And many were the fallen.

And it came to pass that Computervision did devour CIS. But the warriors of CIS did battle mightily, and took unto themselves shares of the devouring giant.

And whilst these things were coming to pass, it did come to pass that Prime and ICL did meet in single combat to decide the fate of CAD Centre. And valiantly did they tourney. But ICL did say unto itself: "Verily, if we do battle with Prime, we shall get stomped on."

And so it was that ICL did join forces with SIA, and Atkins, and the learned scholars of Cambridge University. And CAD Centre was saved from the ravages of Prime.

But Computervision covered still further territories and spake unto Chilvers, champion of CIS, saying: "Take up thou the staff of managing director of CAD Centre, and keepest thou an eye on them."

And Prime, seeing what Computervision had done, did send an emissary to sit at the High Council of CAD Centre.

And so it came to pass that CAD Centre did own the products which Prime did own the marketing rights thereof, and Computervision did watch over all through the eyes of Chilvers, and ICL did say: "Verily, we do not appear to have gained much by our strivings at CAD Centre, and powers from the dark land do control its destiny."

And the High Lord Baker did look down on these things, and was sad. And whilst he wept, did the Arabs come and carry off Quest Automation also.

And so it came to pass that the land of UK did come to have small reward for its strivings in Cadcam.

Here endeth the first book of Cadcam.

Personal appeal

WITH shameless sexism, a Japanese company has come up with a novel way to peddle personal computers.

Pasol of Tokyo is planning to sell the things on the doorstep by appealing to the undoubted charms of its sales ladies.

The company hopes to recruit 60 "Pasol ladies" to sell its hardware, including the NEC PC-8000 and Fujitsu's *FM-7* personal machine.

The company, which also markets software, says that it will expect each of its girls to vend at least one of its personal computers a month.

This seems a modest enough target to begin with, and we here at *Computer Weekly* wish them well in their pioneering enterprise, although we cannot really condone the cynical, if harmless, tactic of taking the dignity of women in vain.

PC shock revelations . . . .

I HAVE often thought that psychiatrists and marriage guidance counsellors would, in an ideal world, be replaced by a computer. Well, perhaps Utopia is closing in on us, at least if *The Sun* is to be taken seriously for once.

That cantankerous comic tells us of a scheme to give computer users confidence and interesting sex lives. "A personal computer in the home is the ideal listener for people tormented by sex problems," we are informed.

Then mysteriously the article adds: "There will be help for homosexuals."

Could it be that the PC aims to refresh parts that humans do not normally reach?

Chad

Liveware File

by Don

10 YEARS AGO

FROM COMPUTER WEEKLY OF JUNE 28, 1973: Ferranti announced that it would seek a Stock Exchange listing of its ordinary stock . . . Shell-Mex and BP bought the millionth tape reel supplied by Memorex in the UK . . . The Hoechst chemical concern entered the office information processing equipment market with the aim of becoming "a third force along with Rank Xerox and IBM" . . . Siemens announced two new entry level systems, the 220 and 230.

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, June 30, 1983

It's time for an exam standard

"COMPUTER programmers are some of the best paid and most sought after people in the world and we can train you to become one. Sit for the internationally recognised City and Guilds range of qualifications."

That was the offer from a commercial training school in an advertisement challenged unsuccessfully by the British Computer Society. The school was challenged over the implication that a City and Guilds course can make the student a programmer with a widely recognised qualification.

The BCS and the Institute of Data Processing Management say a City and Guilds course is no guarantee of fame and fortune as a programmer. The qualification, they protest, is not generally accepted.

But the school says this is only because it is not sufficiently publicised. The school calls for some sort of industry standard entry qualification.

There is a horrendous mish-mash of "professional" examinations covering the computing industry.

There are City and Guilds courses. There are National Computing Centre courses for everyone from school leavers upwards.

The British Computer Society and Institute of Data Processing Management have rival examination courses. The Manpower Services Commission offers Tops courses for people who want to change career and try computing.

And there is constant argument over whether university graduates in computer science are worth taking on as trainee programmers.

Is it not about time a national standard was set at all levels of experience, from trainee onwards? That could impose a standard for commercial training schools – the centre of much controversy in the seventies – and help aspiring computer people break into the vicious circle of "no experience, therefore no job".

Keep Inmos, don't sell

"If you don't have a computer industry in your country in the information technology age, you won't have national security in your country."

Words similar to these were spoken to Industry Minister Ken Baker by Shiro Yoshikawa, an executive director of Fujitsu, during the course of the ICL crisis two years ago.

They would serve as a salutory text for contemplation as the government prepares to dispose of Inmos. The UK is 70 to 80% supplied by American companies for all our technology needs, which includes computers and electronics.

There is nothing inherently wrong with this. Our American commercial colleagues are more than well disposed to this country, as is their government in principle.

The problem is that this does not always work out in practice: US decisions on a policy towards the USSR often are not in line with either the UK perception of the problem, or indeed with the UK perception of what the solution should be.

Into the middle of this trap fall our companies which are dependent on US technology. Their component supplies can be held up by politically inspired bureaucracy in the US. The best policy in the light of all this is self-sufficiency, which is where Inmos comes in.

Self-sufficiency is just the kind of virtue that ought to recommend itself to a Conservative government, and retaining a major stake in Inmos, either by having a UK company buy it, or floating it on the Stock Exchange, is one vital part of self-sufficiency in the information technology age that we cannot afford to be without. Inmos has not instilled the kind of confidence one would like. But control, not abandonment, in what is called for.

A self-sufficient UK information technology industry would have made the current trade friction with the US a marginal matter, instead of the central issue it is.

Shiro Yoshikawa's Japanese countrymen have not made the same mistake, as that country now sees the birth of its fifth mainframe computer manufacturing company. Using a revamped UK owned Inmos as the foundation of a self-sufficient semiconductor industry would be a step in the right direction for the '80s.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by Frank Coma of London, who wins £5.

"Maybe isn't everything. A duffer at maths and English will probably blossom into a computer programmer."

Daily Mail

LETTERS

Give software action fair coverage

THE article "Undeterred NCC plans D-11 sale" by Claire Gooding in last week's *Computer Weekly* raises an issue about what is fair press coverage of legal action in the computer software field.

You say "according to managing director Ritchie McGladdery, parts of RPL software were used in the D compiler, as well as in LEX-II which uses D".

As the original author of NCC Filetab, RPL-11, LEX-II and D-II, I am more qualified than Mr McGladdery or anyone else to say which of the above software is or is not a copy of other software. I am also well well aware of the 1956 Copyright Act, which I have read.

When FSS attempted to obtain an ex-parte interlocutory injunction to stop ACE from launching D at Compec last November, the judge ruled that FSS did not have an arguable case. Your article, however, says in its first sentence, that D-11 has a "legally murky future".

We suggest that your readers might, like us, wish to be influenced by a high court judge in these matters, rather than by the uninformed speculation of your reporter.

We at ACE are very surprised to see references to this case in your paper, presented in such a way as might lead an uninformed reader to suppose that there was some credence in FSS's claims. We refute these claims entirely and believe that FSS's motives in continuing the argument in the press are just an attempt by a worried competitor to suppress the launch of our product which is a generation ahead of the one they market.

T. J. BARNARD
Managing director
ACE Microsystems
London W3.

Expertise is eroded

YOUR story "Production problems hit Kilostream users" (*Computer Weekly*, June 16) reminds me that automatic component insertion and wire wrapping were in use at GEC's old radio and TV works in Coventry (before it became part of GEC Electronics) in the late 1950s.

When GEC acquired Arnold Weinstock with the purchase of Sobel McMichael, he scrapped it in favour of female hand assembly at his old S/M plant in South Wales, and increased the ex-works cost of production.

This action would also result in loss of expertise and continued development of these production processes within the group of GEC companies.

What else can you expect from an accountant running an engineering company?

K.G.
(Name and address supplied)

Plessey micro based on 68000

WITH regard to your news item "Unix for Plessey", I would like to stress that the new Plessey micro is based on the Motorola 68000 chip and not the 6800.

The port of Unix was carried out on behalf of Plessey by Root Computers.

JEREMY BIGGS
Press Agent
Root Computers.

Irritating ads attract attention

WITH regard to Mr Lake's letter (*Computer Weekly*, June 9) complaining about too much "nudge, nudge" and too little "byte-byte" in Omnis' advertising, I can only console him that he, as well as I and other people connected with advertising, does not know exactly how advertising works.

We only know that if we stop advertising we usually stop selling.

Bearing in mind also that the detailed brief behind a particular ad will very rarely be obvious to the reader, it stands to reason that some ads will irritate on first impression. Which does not mean that they have not worked.

Think again, Mr Lake. Is not the intention of an advertisement to bring a product or service to the attention of a prospective buyer?

Any serious buyer would ask for more details instead of complaining that they were not in the ad. By those standards, my opinion is that the ad worked.

DICK BARTON
The Pan-European Marketing Executive
Amsterdam
The Netherlands.

The Editor welcomes letters commenting on subjects published in Computer Weekly, *or on original topics. All letters must be accompanied by the writer's name and address, not necessarily for publication.*

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PEOPLE

■ **Martin Waldron** (above) has been appointed network marketing manager for Masstor Systems International. He will be responsible for the European marketing support of Massnet, the company's high-speed networking facility. Waldron was previously European marketing manager for Network Systems Corporation.

■ Imagine Software, the Liverpool-based games software house, has appointed **Bruce Everiss** as general manager. He will be responsible for the organisation and co-ordination of the company's activities. He previously worked for Ladbroke's Laskys operation, and set up and ran its in-store chain of computer shops.

■ Distributed Systems, a computer consultancy specialising in the banking and insurance fields, has made two senior appointments. **Andy Hazell** has joined as manager of International Banking Systems. His responsibilities include providing development and support resources to international banking package users, as well as providing advice on improving systems performance. **John Wright** has joined as manager of Insurance Systems, from Hill Samuel Life, where he was systems director. His responsibility is to concentrate on expanding DSL's activities in the unit linked sector.

■ Sales growth has resulted in two new executive appointments by Kerridge Computer Company. **Jerry Patterson** has been made southern area manager, based at Newbury, and **Mike LeRoy** is now northern area manager in newly established offices on the Birchwood Science Park, Warrington. Both executives have wide experience in computer systems and have the responsibility of providing sales and customer services for Kerridge clients supplied with systems in specialised form.

■ **Alan O'Neal** has been appointed to Pete & Pam Computers' technical support department in London. O'Neal has four years' experience in chip technology.

■ **Martin Hunt** has been appointed market development manager/data communication products for Ericsson Information Systems. Since 1977 he has been technical services manager with Datasaab, which was amalgamated with Ericsson. **Michael Bearcraft** has been promoted to market development manager for small business systems, Alfaskop terminals and financial terminal systems for EIS. He joined the company in 1976 as a systems manager.

■ CASE has promoted **Bob Rickwood** (below) to international marketing manager with responsibility for export sales. He was most recently national sales manager for CASE's data communications products.

■ **Mike Tait** (below) has been appointed national sales manager for Commodore Business Machines (UK). He joins the company from LSI Computers where he was general manager, sales and marketing, for two years.

■ Learmonth and Burchett Management Systems has appointed **Paul Noakes** as associate director with responsibilities for government consulting projects, and **Tony Webb** as sales and marketing manager to promote the recently extended range of LBMS training courses and consulting services.

■ **Malcolm Boothman** has recently been made a director of Leda Computer Systems, a member of the Brysdale Group in Preston, Lancs. He joined the Brysdale Group three years ago and was previously general manager.

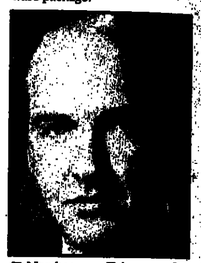
■ Following the formation of IMI Computing to provide a comprehensive computing service to customers outside as well as within the IMI group, **Roger Authers** has been appointed systems director, **Michael Higman** operations director and secretary, and **Roy Pagett** operational research director. Authers joined IMI in 1970 as a systems analyst, while Higman joined the former ICI Metals Division, now part of IMI, in 1954. Paget has worked with IMI at Witton since 1968.

■ **Dave Reid** has been appointed Rapid Recall's product manager for Hewlett-Packard personal computers. Reid is responsible for the marketing and sales of all Hewlett-Packard Series 80, Series 100 and Series 200 personal computers, their peripherals and their accessories. In 1981 he joined Crellon also as Hewlett-Packard product manager, and was responsible for the HP85, 87 and 125 personal computers.

■ **John Lane** (below) has been appointed sales executive with the Irish office of AIM, with responsibility for the ICL PC2, including the general business system, and Videomanager, a new system for video libraries. Lane was previously accounts manager with Burroughs Machines.

■ Adatco Computer Services, specialist in turnkey solutions for the insurance broking market, has appointed **Sandra Conway** as customer support manager. Her responsibilities will include training and after-sales support. Conway joins Adatco from Sanderson Law and Company.

■ **Terry Thomson**, formerly business development manager with Intelligence UK, has been appointed director of Dataflex, the microcomputer systems and software company recently appointed sole distributor for the Percon Modeler financial modelling software package.



■ Northern Telecom Data Systems has appointed **Robert Ford** (above) as director of finance and administration, Europe. Reporting direct to the vice-president, Europe, he is responsible for the finance, planning and administration of all company activities in the nine European countries from which it operates. Ford brings extensive experience of European operations of international companies to his post. He has spent the majority of the last 10 years working on the Continent, and is fluent in Italian, French and Dutch. Most recently, as divisional controller of Dresser Industries' industrial products division, he was based in Brussels for two years.

DIARY

JULY 5

Computer Use in Small Hotels. Run by Middlesex Polytechnic, it takes place in Hendon, London. Cost is £55. Details from Carol Moon, 01-202 6545.

JULY 11-15

Practical Project Leadership, at the Swan's Nest, Stratford-upon-Avon, is divided into two, one-week modules. The first deals with the practicalities of controlling and organising project teams. Cost is £450. The second, from July 18-22, looks at leadership styles, motivation and communication. Fee is £495. Both weeks booked at once cost £880. Details from John Matchett Ltd, (0295) 56161.

JULY 12, 13

Viewdata Systems is a briefing seminar for management given by consultant Langton Information Systems. Organised by NCC, the venue is the London Tara Hotel and cost is £276 for NCC members, £306.67 for non-members. Further details from NCC, (061) 228 6333.

JULY 21

Unix for Managers at St Ermins Hotel, London, is designed to give an overview of Unix. Details from Blesadale Computer Systems, 01-828 6661.

AUGUST 8-12

Introduction to Organisation and Methods is designed for those involved in administration or management who need to review current systems. It takes place at the Henry VIII Hotel, London. Course places at £510 may be booked through the course registrar, Cherry Bigmore, on 01-261 9237.

SEPTEMBER 5-16

Part one of the Urwick Management Programme, called Coping with Change, takes place at the Urwick Management Centre, Slough. The course is run in conjunction with a second, two-week course called Getting Results. Fee for both is £1,600. Several other dates during this year and next have also been set for this course and many other management development and training courses. Details from Urwick, (0753) 34111.

SEPTEMBER 7

Prestel and Teleosoftware — a Technical Briefing for the User, is a course organised by the Institute of Information Scientists. It is going to be held at Manchester Polytechnic from 9.15am to 5pm. Cost is £20.70, including VAT. Further information and booking forms can be obtained from G. F. Turner, CIBA-GEIGY plc, (061) 872 2323.

CONFERENCES

■ THE 58th International Data Security Workshop takes place at the Hotel Zurich, Zürich, Switzerland, from July 11-14. Organised by the International Association for Computer Systems Security and Data Security Workshops, the workshop will comprise 19 sessions covering subjects such as controls for dealing with security problems of distributed processing, computer facilities support, personnel controls, communications security, logical and physical access controls of programs and data, etc. Details of the Computer Systems Security Professional certification program and the establishment of IACSS in Europe will also be highlighted. Further information from the Registrar, IACSS, Six Swartmore Lane, Dix Hills, New York 11746, USA. Tel: (516) 499 1616. Telex: 143245 OPDATASEC.

■ AUTUMN seminars from Frost and Sullivan are starting with Data Communications for Microcomputers, which is being held at the Park Lane Hotel, London, on September 1 and 2. Seminar leader will be Terry Pardoe, vice-president of International Management Services. Cost is £385, plus VAT. Details from Frost and Sullivan Ltd, London.

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4th–7th October, 1983
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CW/1

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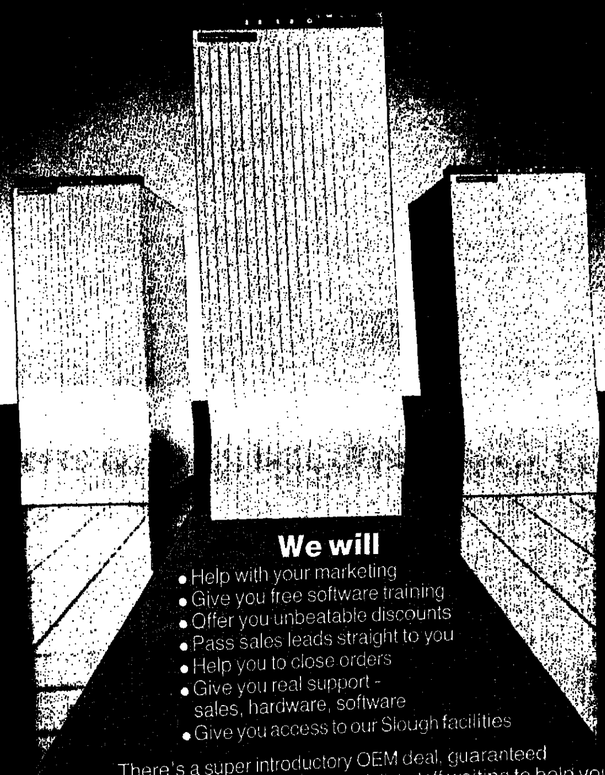

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WORKPLACE

Computer helps find a useful role for jobless

IT'S an old story now. A data processing department finds that its bureau service is getting too expensive and restrictive, so decides to buy its own machine. And then slowly but surely the computer extends its tentacles through the organisation and gets its hands on everyone.

This is the case with Community Service Volunteers (CSV), which bought an Alpha microcomputer system last August to replace a bureau service that was making program development and maintenance even more expensive. And already the department is considering buying another computer for the accounting applications.

The computer is used for holding details of projects undertaken, and of the volunteers who undertake them. If a volunteer wants, say, to work with old people in Leicester, then the computer can search for a suitable project. Similarly if a project comes in requiring particular skills, volunteers can be sought to suit.

CSV places about 2,000 volunteers a year. About half of these are school-leavers between 16 and 18 who cannot find a job, or are filling in time before going to university. But anyone can apply, and several of the volunteers are over 30.

According to computer services manager Vidas Domeika, it is a misnomer that CSV caters mainly for deprived kids. One of the aims of the service is to help mellow young offenders by showing them the satisfaction that can be gained working for the old or handicapped.

But the main aims are twofold: to ignite enthusiasm for projects in local communities, and to find people to do them.

One big gain from going to an in-house computer is that workers in the field can have access to local terminals. This, says Domeika, speeds the processing of applications, and saves travelling expenses. So far there are five remote terminals, and six in London.

Domeika has a fetish for program generators. "I'm fascinated by them because I'm a lazy person."

I cannot allow that statement to go unchallenged. If Domeika really wanted to wallow in idleness, he would have been better staying where he was before joining CSV – as an ICL mainframe programmer for British Telecom.

He moved because he was bored with mainframes – hardly the attitude of an idler.

As he says, the move was ideal: "A small computer and taking complete control. You could say I do everything at every installation – even engineering."

The program generator which gives Domeika such pleasure is called Andy, for the Alpha micro. "It links in with the Amos file management system, so it's like a database, with generation linked in as well," says Domeika.

The trouble with some generators is that they will let you write a bit of code, but do not integrate with the rest of the system, says Domeika. "A good generator lets you get at the code generated and lets you fit in your own code."

Andy produces Cobol-like code, which can be edited and then recompiled.

CSV has four sections, one of which is the volunteers placement scheme addressed by the computer. The others are the youth employment program, an advisory branch that produces publications on what kids can do after leaving school, and a media program for the classroom linked in with local radio.

A young community service volunteer with his flock.

CSV's funding is rather delicate. As Domeika says, the organisation does not sell anything, and has to survive on what people donate. "We can only go to a local authority and say: 'Look this is what we are doing in your area. Can we have some money?' "

One of the next applications for the computer will be invoicing of local authorities for the volunteers placed in the area.

"We get paid for each volunteer we take," says Domeika. So in a sense, CSV does have something to sell – a ticket from the dole.

Training scheme with a job at the end

NEW training schemes for unemployed school leavers are springing up like toadstools. But does a job come at the end of it?

London Chamber of Commerce and Industry (LCCI) has launched a scheme with the promise of a job – or further education – at the end of a year's training. The aim is to take 1,000 youngsters a year, and give them 13 weeks' formal training, plus 39 weeks' working for companies roped into the scheme by LCCI.

"We estimate that half will get jobs during the year's training," says a spokesman. "Those who don't will come back into the scheme for more work experience. We would fit them into some sort of program that will give them more companies to work for."

Under a pilot scheme set up last August to test the water, 75 out of 100 have found work now.

The scheme is an extension of the government's Youth Training Scheme, with the LCCI providing up to an extra £100,000 for pump-priming, and to allow kids who fail to find work to stay on for a second term.

The Manpower Services Commission will fork out £2 million if 1,000 are taken on. This will provide for basic facilities, and the pocket money of £25 per week per person, plus travelling expenses.

The scheme will accept any youth, with or without O-levels, so long as special care or treatment is not needed. Three centres are being set up, in east, south and west London, to take 180 school-leavers each this September.

The total will rise steadily through the year as more join each week, reaching the full quota next summer.

March brings a recruitment trend

RPG programmers can now go to a specialist recruitment agency to find their next job in the IBM mini market. The agency is a spin-off of March Computer Systems, MCS, the UK's largest independent systems house for users of IBM's System 34 and 38 minis, known collectively as GSD.

Richard Milsum, who heads the new company, March Computer Recruitment (MCR) believes he is setting a new trend towards more specialist recruitment agencies. "You could do the same with Honeywell, DEC, Univac . . .," he says.

Milsum says he has already placed programmers with BIS, Barbican, and other big names in IBM software. "I've contacted 300 companies so far for GSD, and had an overwhelming response," he says.

RPG is the standard language for GSD, and comes in two versions, RPG II and RPG III, in both cases it is hard to find good people, says Milsum. "But with the introduction of the System 36 in September, there is likely to be an upsurge of interest."

PUZZLER

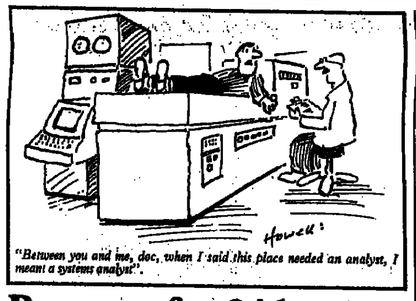
CONSEQUENT upon the recent discovery of a giant prime number containing 25,962 digits (*Computer Weekly*, June 2), I hasten to put forward this alphameric in commemoration:

A
LARGER
PRIME
WILL +

APPEAR

where PRIME is indeed a prime.

See page 55 for a suitable addition sum.



"Between you and me, doc, when I said this place needed an analyst, I meant a systems analyst".

CONSULTANT'S CASEBOOK

Human issues can make or break a project

John Simpson continues his occasional series

IF grassroots resistance to project developments are not properly identified and the human issues satisfactorily resolved, the success of a costly project can be greatly impaired.

Perfecta Cleaning had been in the laundry business for 80 years. For the past 10 years the majority of its revenue had come from the towel hire division. It operated out of 12 locations in the Midlands, the North and North-west, with a head office in Manchester.

The company had remained family owned, and its management style could best be described as avuncular.

Computing technology had not entirely by-passed the backwaters of the Perfecta organisation. The central accounts office in Manchester, for example, utilised the company's IBM 4341 for customer billing and debtor records.

As part of a financial efficiency drive in the towel hire division, it was realised that the mailing of customer delivery dockets from each of the branch laundries to Manchester was costing money in delayed billings.

It had therefore been decided to de-centralise the invoicing responsibilities to the 12 outlying laundries.

IBM System 38s with standard software would be used, with minor cosmetic customisation. A conversion and implementation timetable of 18 months was proposed, equipment and software ordered, signed and sealed.

It was only then that the trouble started.

The problems surfaced at the first full meeting of branch laundry managers, which was held to explain the development and proposals. It became clear that the change in procedure was simply not welcomed at the branch level.

The branch laundries resented the additional work that billing and price management would impose on their staff. They saw the role of their office staff as being that of order-takers and expeditors.

While the project was not under my consultancy's control, we had assisted Perfecta's DP department in running benchmarks on appropriate equipment. Three of the four machines we evaluated, with their supporting software, could more than adequately handle the application for the company. They decided to go the IBM route based on a "safety in numbers" approach.

The company now called us in to advise them on how to overcome the branch level resistance.

It was clear that the company had simply failed to take into account the feelings and attitudes of the individuals at the branch operating level.

It was important to recognise, we pointed out, that head office was expecting old and established practices to be changed overnight. It was also expecting clerks, who had previously taken merely a recording role in the past, to become pro-active in the detailed preparation of bills and the maintenance of price files.

What was required, we concluded, was a programme which would enable the branch laundries to identify with the changes that were to take place, and to evaluate and determine for themselves the best manner in which they should be implemented.

Our first move was to set up a participative panel composed of senior branch officials.

This panel was to act, in effect, as a steering committee for the project. By involving individuals from each of the laundries concerned, we ensured a voice from all interested parties within the organisation.

Then, having identified where the hawks and the doves were located, we changed the original implementation plan, and selected instead a site which was conducive to the changes proposed.

Our next step was to devise a portable *Son et Lumière* presentation using two slide projectors and a simple tape recorder set-up. This package was put together professionally by an audio-visual company.

The object was to demonstrate to each branch laundry the benefits which might be achieved from a change in systems approach, and at the same time described how the change would take place.

Perfecta had also to recognise the additional responsibilities and effort involved at the branch laundry level. It was entirely appropriate, in this situation, to upgrade the staff involved.

Having chosen a fully receptive site as our implementation base, news of its successful implementation spread throughout the company.

But it did not and could not assure success. This could only be achieved through the sensitive handling of the human problems associated with a system change of this nature.

Looking back on this project, I perfectly readily see the need for consultative action when planning system changes at the grassroots level. At the end of the day it is the resolution of the human issues which make or break computer projects.

Program for 24 hours – you could earn £12,000

YES, we hear it all the time – good programmers are hard to get. But instead of grousing about it, one company starting up a software team in Warrington has launched what looks like a successful public relations stunt to solve the problem.

Direct UK, which deals with office communications software for 16-bit micros, is holding a 24-hour marathon session at the terminal in an attempt to sort out the chaff from the champs. The survivors of this gruelling encounter with the computer might be offered a job – but even if not, the company will pay them £200 for their trouble.

The idea seems to have attracted the imagination of programmers and others. Press response has been staggering says Direct managing director Stephen Norman, including a feature by LBC Radio.

There is a danger, he says, of an embarrassment of programmers applying for the scheme. But whether they will prove to be an embarrassment of riches, he is not so sure.

His past experience of trying to select good programmers by interview has left him wondering if there is enough talent about. At any rate he has no faith in his, or anyone else's ability to pick the right people at interview.

"You can't really tell what you're going to get," he says ruefully.

The programmers Norman wants will earn about £12,000 a year, so it is worth taking a little trouble to find the right ones, he contends. Hence the marathon session, which begins with eight hours of programming puzzles. "This is to pick up on creative flair," says Norman.

Survivors progress to an all-night programming session, fortified by copious quantities of coffee in the best DP tradition.

Norman says he is looking for several programmers with skill in writing some kind of complex communication software. "I would like them to have some competence in C or Pascal and some background writing communications software, working for Plessey or something like that."

The marathon takes place on Saturday, July 9, in a Hertfordshire manor house.

Workplace is compiled by Philip Hunter

MACHINE VISION

Robots with vision expand into industry

Another species of equipment designed to imitate nature is emerging from the research lab . . . Keith Allen reports

British Robotic Systems, with it Autoview Viking vision system, is trying to make the pace in this fast-growing market.

JUST as industrial systems engineers are learning to live with the robot, another species of computer-based equipment designed to imitate nature is emerging from the research laboratory – machine vision systems.

According to the National Bureau of Standards (MBS) in the United States, machine vision will handle 90% of all industrial inspection activities requiring vision within the next decade. The return on investment period for such equipment, usually estimated at 18 months, could be much less, according to the NBS.

The views of the NBS are used by Technical Insights Inc of Fort Lee, New Jersey, to promote a 300-page report* on machine vision. It includes descriptions of the US-built products now available and looks at some of the main applications areas, including those in robots.

Technical Insights points to today NBS prediction that one quarter of all industrial robots will be equipped with some form of vision by 1990. But the report's author, consultant Richard Miller, believes industrial inspection, other than robot input, will prove the fastest growth application for machine vision technology.

Miller notes that vision systems for inspection can be bought for under £5,000 if black and white (binary) image processing will suffice. But many applications demand equipment that can handle grey scale images (distinguish between shades between black and white)

One in four industrial robots will be equipped with vision by 1990

and the costs suddenly jump to some 10 times as much as black and white equipment.

Several US companies are active in the high end of the machine vision market. They include Octec Inc of Burlington, Massachussetts and Object Recognition Systems of Princeton, New Jersey.

But a number of firms based on the east side of the Atlantic are clearly determined to prove that they can match the pace in this fast-growing market. The contenders include the British Robotic Systems, Shenfield, Omicron Electronics of the Belgian company Image Processing Systems.

The Scottish firm, Electronic Automation Ltd of Hull, is also selling customers for its completely new colour image processing system, Inspectrum, which it regards as more effective than grey scale for a lot of applications.

To date its most impressive showcase is the British Robotic Systems' Autoview Viking vision system is being built at the Colchester factory of the machine tool builder, The 600 Group, where it provides both the identification and [illegible] information [illegible] company's robots on its flexible production line. But BRS also points to inspection applications for Viking such as crack detection in forgings and turbine blades and surgical instrument examination.

Viking uses a Digital Equipment Corp LSI-11/23 processor to run the image processing software. The input side of the system consists of an analogue to digital converter linked to a 650 line camera, an image store for 256×256 picture elements, and a D/A converter linked to an image monitor. On the output side an optional interface module can be used to transmit signals to a variety of units including robots, conveyor systems or data loggers.

A significant new product from BRS is the Linear Array Processor. It comprises a row of processor elements that can manipulate a line of picture elements in parallel. Designed by the National Physical Laboratory in conjunction with BRS, the Linear Array Processor is said to be able to allow some applications to be speeded up 250 times.

But BRS is not the only company to offer technology for parallel processing. After some years of gestation at University College, London, the Cellular Logic Array Processor, Clip-4, is now being integrated into commercial image analysis products by Stonefield Omicron Electronics based in Horsham, Sussex.

The British Technology Group owns the rights to the Clip-4 technology and awarded Stonefield the worldwide rights to configure producers around the device.

Each Clip-4 takes the form of a 40-pin NMOS custom chip and comprises eight interconnected processors, each of which can process one picture element (pixel) in parallel with all the others. Multiple Clip-4 devices can be interconnected in such a way that every processor is linked to its eight nearest neighbours across the complete machine.

In this way a complete image – not just one line of it – can be processed in parallel. Each processor incorporates 32 bits of memory for storing and processing each pixel and the interconnection of the processors provides 32-bit planes.

While Clip-4 is ideal for processing black and white images it can also handle grey scale. But it can also handle grey scale with 256 graduations would require eight-bit planes of storage and take about eight times longer to process than the simpler system. If two different images are stored in two different bit planes all the processors can be instructed by the host computer to perform an operation on them simultaneously, such as combining them, and store them in a third bit plane.

Processor interconnection means that any pixel can be combined with any or all of its near neighbours. So functions like edge detection, image shrinking, image expansion and area filling can also be carried out in one machine cycle. Large images can be split into windows which are then stored and scanned one at a time by the processor array. So an image with 512×512 elements could be split into 16 windows to work with an array of 128×128 processors.

Stonefield plans to offer board level systems based on Clip-4 and costing as little as £3,000. Customers will be left to add their own host computer, cameras, monitors and other input/output devices. Stonefield can also supply about 100 software routines developed at University College on a PDP-11 host.

British Robotic Systems acknowledges that Clip-4 is faster than its Linear Array Processor because it can process a complete image in parallel rather than just individual lines. But BRS believes that the Linear Array Processor will work out less expensive than Clip-4, pointing to its much greater simplicity and the fact that it is constructed from completely standard components.

Four pixel processors, each one-bit wide, are provided by one four-bit wide bit slice chip from Advanced Micro Devices. This chip is used as the central processor building block in many 16-bit minicomputers. In the LAP, multiple AMD devices are joined to form a complete processor. A typical LAP would provide 512 single bit processors. A random access memory, again using standard devices, provides each processor with 256 bits for pixel storage and processing. Microcoded programs for specific applications are loaded from the host computer, typically an LSI-11/23.

BRS notes that the memory allocated to each LAP processor can be increased relatively easily because it is off the chip.

BRS plans to offer the LAP either as an enhancement to the Viking or as part of vision systems it supplies on a turnkey basis.

Unlike Stonefield, BRS is not offering its parallel processor as a separate product and cannot give separate prices. But it quotes £25,000 as the typical cost of a complete turnkey system, including host computer and all the peripherals.

A 32-bit 40 Mbytes per second data highway called Omnibus is the key element used to achieve the speed necessary for inspection work by the ICOS 20000 machine vision system from Image Computer Systems of Schilde, Belgium. Omnibus links three modules – the sensor controller which interfaces TV cameras and other sensors, the memory bank which provides up to four Mbytes of image storage and the analytic processor which handles image processing. Functions include coding different objects in an image and histogramming – calculating the frequency distribution of different grey levels.

The Belgian company is guarded about the architecture of the analytic processor except to reveal that it is implemented in standard logic devices. It can handle images with 512×512 pixels and eight bits per pixel.

Inspectrum from Electronic Automation uses colour discrimination, rather than complex grey scale image processing to detect defects. The company's managing director, Clive Loughlin, claims the £15,000 system can process a full colour picture as quickly as one line of a grey scale image can be processed by a grey scale system. The food industry is identified as one of the major application areas for the system.

Like the ICOS 20000, Inspectrum incorporates a Motorola 68000 based computer.

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SITE VISIT

How an award winning system revived the fortunes of Leyland Trucks

Comserv's AMAPS has helped bring a 'revolution' in plant, products and attitudes . . . Mike Waller reports

"Leyland Trucks is good for AMAPS, and AMAPS is good for Leyland Trucks."

WHEN 1980 dawned every European heavy truck manufacturer was suffering; the world was entering recession; everyone's market was collapsing.

For Leyland Trucks it was even tougher. In addition to the market problems, they had an additional competitive burden in the flattering exchange rate of an oil-supported £-sterling.

Changing markets demand new approaches. To achieve greater flexibility and quicker response the top management of Leyland Trucks decided to sub-divide their group into units which, although still sizeable, were smaller and more manageable. Local managements were then given targets and a wide autonomy – and told to get on with it.

With annual sales of over $500 million, and employing around 12,000 people in its headquarters and six plants, Leyland Trucks is a big company by any standards. The sub-division and the subsequent delegation of authority was crucial. Only in this way, with each of those plants enjoying considerable autonomy, could they have initiated the total revolution in plant, products, managerial approach and workforce attitudes which have come about in the last two years.

So in five of its plants, Leyland is installing Comserv's Datapro award-winning Advanced Manufacturing and Production System (AMPS). Those five are the engine and assembly plants at Leyland in Lancashire, which make cab and chassis trucks from 10 to 40 tonnes for the domestic and European market; the engine and assembly plants at Bathgate, near Edinburgh, which make a similar size range but predominantly for export; and Albion works, near Glasgow, which supplies the others with axles and gear boxes.

"The rate of change has been incredible in plant, in products and in attitude. In a few short years we have built both the most modern truck assembly plant in Europe, and our own test track and technical centre to go with it. We have also designed and launched a completely new modular family of trucks. But it is not only the plants and products that are being revolutionised – so are all our attitudes. The educational change is just as significant as the technical.

"Installing a business management system is a very complex undertaking and represents a major component in that educational load. We were certainly looking for all the help we could get and one of the major attractions of Comserv was its commitment to education and training. We not only have to explain to people what we are doing and why; we have to make sure we are getting the message across. They must be clear how it will affect them and understand what we mean when we talk of MRPII and therefore why, for instance, we have suddenly closed off stores to which they have had ready access for years.

"We have been working a form of MRP since the 1960s, and the difference has to be explained. So, once the decision was made, the whole programme was first made a subject at one of our regular management conferences when Ian McKinnon, our manufacturing director, made a presentation to some 300 senior and middle managers. It was since been extended through both union and junior management channels. By the time we have finished, everyone on the payroll will have heard about the whys and wherefores of MRPII. It really is a tremendous programme, and Comserv has given us excellent training support throughout."

We not only have to explain to people what we are doing and why; we have to make sure we are getting the message across. They must be clear how it will affect them and understand what we mean when we talk of MRPII

Thus Gordon Lindsay, systems director, when explaining the background to the adoption of MRPII.

When did it all start? "It was back in November 1981. We knew we needed a change and, while I was in the States, I was impressed by one or two companies and the way they managed their businesses. It was the first time I had heard of MRPII so I went on a short course to convince myself. Then, when I came back, I convinced our senior management."

Were they difficult to persuade? "Not really. If you can get to the right level and talk sensibly it can be quite quick. In Leyland Trucks that is not difficult; most decisions rest with local management. We only had to look at our competitive position – costs too high, lead times too long, inventory from wall-to-wall, to know that something had to be done.

"Our present system is really an order launching device. We then wait for shortages to appear and chase hell out of everybody. The decision to change was taken early in 1982 with the aim of doubling our rate of inventory turn within four years."

With the commitment to MRPII established, software selection was the key factor. A six-man project team was set up consisting of a senior manufacturing man from each of the five interested plants plus Mike Goldie, manufacturing systems manager.

Says Goldie: "With plant autonomy as it is, each could easily have gone its different way; there was no way that I could have overridden them. Fortunately, they didn't want to. The decision was unanimous.

"We made a thoroughly professional job of the selection. We first agreed a lengthy list of questions that each of the contending software packages would have to answer. Then each plant assessed, on a scale of 1-10, the importance to themselves of each of those questions. Each of the four contestants was then similarly marked to show how well we felt each question would be answered.

"When the final totals were calculated Comserv won easily.

"But this was all theoretical and, there being no European installations, we visited a number of users in the States for practical confirmation. And we became even more convinced.

"We liked Comserv's commitment to providing training, we admired its courage in showing us both its success stories and where it had had problems. Everything it did was very professional. And so the decision was made.

"The selection process took eight weeks in all. We underestimated one problem. We need all five factories to use standard software to cut down on systems maintenance and standardise on factory operating methods. However each factory has its own implementation plan and needs to move at its own speed. Each must therefore be able to update its own database as required without interfering elsewhere. But everything seems under control now."

Bob Kyle, now materials manager, Leyland Assembly Plant, and a member of the original project team, is responsible for the switchover to AMAPS for one of the two Lancashire factories. "I believe in implementation being aggressive – almost in taking the props away – although that wouldn't be wise with AMAPS. But this system is only a part of our main problem which is to train a lot of people over a length of time and change the way they work and the way they think.

"AMAPS is a tool, a very powerful tool, and one that we must have to manage the rate of change that we need for us to survive and make good profits. But get it in perspective – while we've been grappling with that we've also made over 1,000 machine tool moves and entered a totally new ball game. This year alone we've computerised the stores in our engines plant as well as implementing various assembly line control systems.

"The project teams are made up entirely from our own operating people – that's how we learn – but they all have other jobs as well, so nothing has been accomplished except by tremendous enthusiasm and hard work from them and many others. When I was in the States, Dick Ling said to me 'Don't get excited about your new MRPII system; get excited about the old one. Get that one working properly and then migrate to the new.' He's right; you can always improve what you've already got.

"Even before AMAPS we've taken £7 million – that's nearly a third – out of our inventory, and we've done it because people are beginning to talk MRPII, to listen to us and give us the chance to show what can be done. We've improved our accuracies on stores and BOM quite a bit and stores haven't stopped the tracks for six months.

"The AMAPS BOM module has been installed for a week and is now waiting for data to be entered. The project team will start the entering so that they know what it's like, and the engineers will complete it to give us a large real database. You can train Leyland people better on Leyland data. But once that's in, subsequent modules can be tested on a relatively small input.

"We'll run AMAPS and the existing system in parallel, moving the present status points where necessary, and use the enhanced power of AMAPS to improve the current system so that the reporting is the same. This should give us about as near-perfect a cutover as you are going to get.

"The other trick we have to pull is to detune AMAPS to fit our situation. What we are buying is an excessively robust system and very, very good training and backup. I'm considerably impressed with everything I've seen; they're something different. But AMAPS is enormously powerful, and can be used in almost any environment. There's no point in using all the bells and whistles just because they are there. We need to reduce the complexity, adapt it for our purposes, and generally make it user friendly to a Leyland material planner.

"You must bear in mind that AMAPS is only a part of the whole change we are putting through. The major part is the people part; we need a new method of approach.

"AMAPS is a tool but the tool is not automatic. The problem's there, but it's people who have to fix it. That needs training, education and practice. The AMAPS control file is beautiful; you can set the level of the problems you are going to tackle, but you'd better be sure that the levels you pick are the right ones."

What difference does he see it making to top management? "I think there are three main advantages. Firstly we will all – production engineering, quality, sales, you name it – be working with the same information.

"Secondly, because that information is more immediately available, and more accurate, the quality of decisions will be better.

"But thirdly, and almost certainly the most important, AMAPS allows you to simulate – allows you to determine that the plan is achievable. Too often in the past we have had a marvellous plan which was never actually attainable. But the benefits of simulation, of knowing that what is proposed is possible, go right up to the executive committee which regularly reviews the immediate past and the coming 12 months. That's where the really important decisions are made and the information they are working with is the distillation of many lower level meetings, all of which will have been helped by AMAPS.

"It is claimed that MRPII improves the quality of life. It could be right!"

One of the most impressive things to the outside observer is the speed with which the original idea is being turned into actuality. Clearly this comes from total involvement throughout, starting right from the top, but how was it so comprehensively sold? "We got our timing right. Leyland Trucks was making massive changes, reducing vertical integration, breaking the group down into smaller units. We were brutally aware of our market position.

"We started by listing our current business problems and realised that if we were to survive we would have to do so through a period of enormous change. This led us immediately to the question: 'How do we manage change?' That in its turn led us to MRPII as the tool which would enable us to manage it; which would bring all our resources together as party to a single system working to a single plan.

"Given that, we knew that it would give us the means to control our inventory and revenue and thus our cash flow."

The other overriding impression is of high morale and burning enthusiasm – not necessarily an automatic accompaniment to sweeping changes in management policy.

How did this happen at Leyland? Let's leave the last word with Bob Kyle: "Because we've been given the chance to show what we can do. Parts of this plant were due to shut, and one of our two engine ranges was to be worked out by last September. We promised to make and supply that engine with only a tiny increase in direct labour and without having to hold a 12-month inventory inevitably, in the event, made to the wrong specification. And we've proved we can, while at the same time, by decoupling the engine and chassis programmes, we've washed all that inventory out of the system."

AMAPS is enormously powerful and can be used in almost any environment. There's no point in using all the bells and whistles just because they are there

In a recent *Directions* (September 1982) ten truisms were listed, of which number 10 read: "Unless everyone believes it will work, it probably won't." Reversing the truism makes it clear that AMAPS is in safe hands at Leyland Trucks. It means that Leyland Trucks is good for AMAPS, and AMAPS is good for Leyland Trucks.

VIDEOTEX

Was British Telecom wrong to make Prestel too domestic?

Michael Thatcher thinks so and he believes BT has trivialised viewdata almost down to the level of space invaders

BT hoped Prestel would be used in the evening by families and by people working at home.

FEW forms of information technology can have had such an unfortunate start in life as viewdata. Seen by one section of the data processing industry as being hopelessly shrouded in mystique, it was regarded by others as an invention in search of a market.

Suppliers of viewdata were partly responsible for this. Some sold cumbersome and costly "black box" solutions, relying on obscure computer equipment. In contrast, British Telecom, which set up the most widely available system, Prestel, insisted on portraying it as a service for domestic users. This trivialisation by British Telecom led, in the words of one industry spokesman, to viewdata being regarded by many data processing professionals as something on a par with space invaders.

In fact viewdata has become a data processing art with many kinds of exponent. As well as companies like British Telecom and IBM, which have the resources to find a prestigious but not particularly profitable service, there are a number of smaller concerns which are doing very well out of viewdata alone.

Customers for viewdata now include nationalised industries such as British Leyland; chain stores like Debenhams; universities; some public authorities; and an increasing sector of the travel industry. The involvement of travel agents may do more than anything else to convince cynics that viewdata has some commercial value, since the margins in the travel and holiday business are notoriously slender.

Viewdata is best seen as being software. More precisely, it is an operating system particularly suitable for untrained users. Most viewdata packages use a superset of the Prestel syntax established by British Telecom.

Although the heart of the system will probably be a mainframe or minicomputer the terminals provided for end users are usually specially adapted domestic television sets. Communications between the terminal and the central databases use a variety of technologies, but for viewdata systems with terminals at remote sites British Telecom lines will probably be used.

For a user who already has some sort of mainframe computer, the hardware required to set up a viewdata system need not be expensive. A viewdata terminal can be installed anywhere there is access to an electrical wall socket and a telephone line. In fact, the monitor can be carried around in the back of a car and set up within minutes wherever it is required.

Just as the equipment required for a viewdata system is simple, so the applications for it are straightforward. Many involve nothing more complicated than displaying lists of information. For instance, the Stock Exchange's Topic system consists of constantly updated lists of share prices, for this kind of application, viewdata's use of colour television monitors is significant as histograms and other graphic displays can be presented.

The Stock Exchange traditionally displayed rising prices in blue chalk and falling prices in red, and this is easily imitated in Topic listings.

Viewdata has much to offer in the automated office too. Electronic mail, the office diary and telephone directory and the filing and retrieval of information can all be managed on viewdata. In these application areas viewdata yields similar benefits to other networked computer-based solutions – it frees users from dependence on paper and allows information to be transmitted quickly in an easily assimilable form.

In some cases where traditional methods using paper are too slow, viewdata may provide the most cost-effective solution to communication problems. For instance, a project being developed by Allied Breweries used viewdata to transmit vital information about production processes from regional breweries to the headquarters in Burton-on-Trent. Previously, this information was printed out, boxed transported by van from each brewery. Delays in receiving and analysing reports could have had disastrous consequences for control of the very large quantities of beer being produced at the regional brewies.

Viewdata can be seen as a user-friendly operating system using familiar and easily available equipment. It can be made more sophisticated, however. By substituting a microcomputer for the "dumb" TV monitor, users can manipulate the data in the database locally. More frequently, the viewdata system is no more than an attractive menu for applications running on the central computer.

A practical approach to delivering such systems is found in the viewdata package supplied by Computex, which allows users to leave a frame of information, enter and use a program, and then return to the frame again. In this, users may be unaware of the sophistication of what they are doing, since Computex uses the same Prestel-like syntax for all operations in its own standard applications, and supplies users with a library of source code which enables them to write their own applications in exactly the same way.

Since a database may be accessed by a routine no more complex than dialling a telephone number, problems of security will inevitably arise. This can be got round by using closed user groups, each with its own password – a user who doesn't know the password doesn't get access to certain files.

A more sophisticated method, again from Computex, uses the concept of multidatabases. A particular user will only be aware of the files which he or she is authorised to access, as the system builds menus dynamically for each user.

For instance, if the user is not permitted to view the personnel file, then this file will simply not appear on the menu which is presented when signing on.

At first sight it may be difficult to see why there has been such a deeply entrenched resistance to viewdata among the data processing fraternity. One explanation may have been the relative failure of Prestel in its early days. Dick Howe, marketing manager of Modcomp, which supplied the Stock Exchange's Topic system, attributes Prestel's failure to BT's insistence on selling it as a domestic service.

BT's rationale was that it already had all the telecommunications traffic it could handle during peak business hours. It was hoped that Prestel would be used in the evening by families and by people working at home. In this way, the chance of selling it as a serious business tool was lost. Unfortunately, suppliers of private viewdata systems found that their products were being seen in the same bad light as British Telecom's trivialised offering.

Determined marketing and the establishment of in-house viewdata systems in the key areas of vehicle dealers (Aregon, Redifon and Computex) and travel agents (Computex and Thomsons) have helped restore viewdata's lost prestige in the eyes of potential users. But a second line of resistance was encountered from within data processing departments.

Data processing managers who remembered the problems involved in installing other DP systems fought tooth and nail to resist the introduction of a new online service which could only make users more demanding.

It may be wrong to regard viewdata as something fundamentally different from other forms of data processing. At the heart of each viewdata system there is a computer which is quite capable of running other applications.

Prospective purchasers of a viewdata system should bear in mind that first and foremost they are buying a computer, and they should be thinking in terms of what else they can do with the machine. How easy will it be to upgrade the computer if their viewdata network needs to expand? What software is available for the machine, apart from the viewdata package? What operating system does the computer use, and how easy will it be to develop other applications for it? Finally, if at anytime the machine needs to be disposed of will anybody else be interested in buying it?

Rediffusion's Viewdata Plus system may have suffered as a result of the hardware it required, as potential users may have been put off by the choice of such an obscure machine, despite substantial subsidies paid to pioneer users by the Department of Industry.

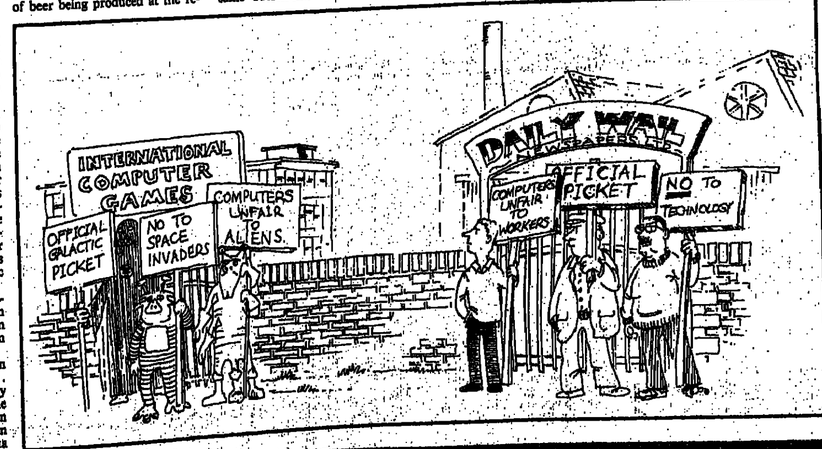
ICL and IBM played it safer by offering their products on widely accepted machines like the ME29 and Series 1. Aregon and Computex both chose DEC systems. Mars Group Services may have put itself at a disadvantage by going for Texas Instruments' kit. At £19,500 for the smallest system, TI suffers by comparison with a similar sized DEC machine at £12,000. Also, TI has nothing to compare with the machines at the top of the DEC range for users who want to expand their systems.

The mystique of viewdata can only be aggravated by anomalies in the way charges are imposed by certain viewdata suppliers. While Computex and Mars sell or licence their software outright to users, Aregon, Mistel and others charge users according to the number of terminals they intend to run on their viewdata software. This is rather like charging customers for a word processing package on the basis of the number of workstations they intend to use with it, and makes the largest system very costly.

There are now said to be over one hundred private viewdata systems established in the UK. Some were sold as packages including the hardware, others as software to run on top of the customers' existing data processing facilities.

Banks and other financial institutions, which initially were put off viewdata because of Prestel, are at last beginning to show an interest.

With the capitulation of the banks, viewdata may at last find full acceptance by the community.



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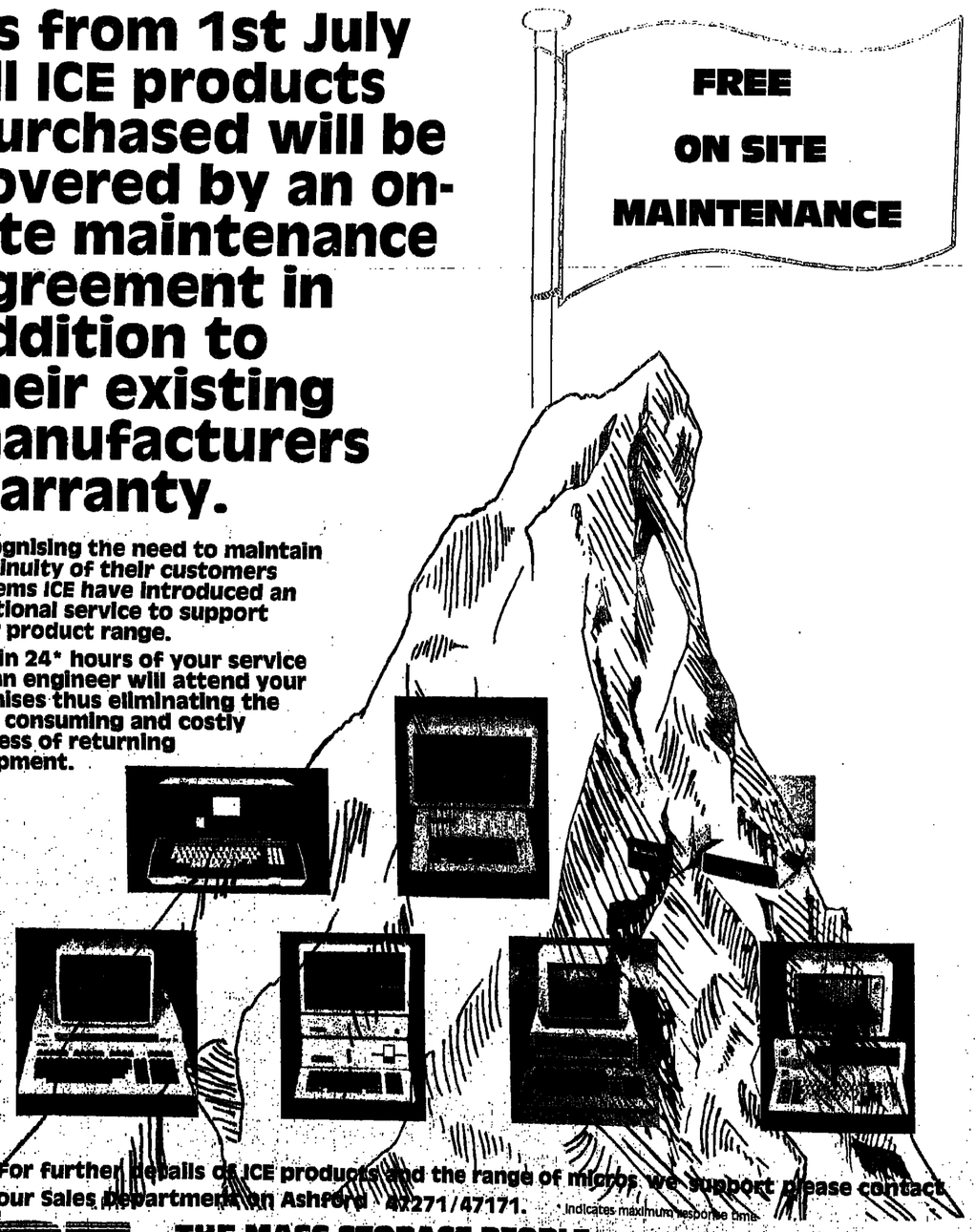

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COMPUTASTARS FOURTH REGIONAL HEAT

Heywood and Lambeth inch ahead for joint men's win

BARNSLEY: a name to conjure with. A town deserving of international recognition for two things – Michael Parkinson and his ego. Now comes a third claim to fame – the northern heat of the DP Olympics was held there on Saturday.

The last Computastars heat before the UK final next month burst upon an unsuspecting Yorkshire with the medicine ball throw. Yes, for the third meeting running, the competitors faced the same programme. After years of expecting the unexpected, the athletes finally met it in the form of unchanged events. Those practising for the naked mud wrestling were to be disappointed.

And in the medicine ball it was the first teams from Data 100 and Heywood & Partners which tied for first place in the men's heat, with the former's number one, Alan Meaning, beating the latter's champion, Bill Edwards, into second place.

Barclays Radbroke Hall and its number one, Liz Porter, took the first of no fewer than five team and individual first places in the women's competition, relegating Crawford and Alison Forshaw to second.

One of the joys of the hockey dribbling course is that it is very long, a fact not appreciated by most competitors – until, that is, they wheeze past the finishing post. Another tie here, with Crawford's men getting revenge for their earlier defeat and sharing first place with the NCC. Data 100's Alan Meaning made it two in a row with victory in the individual competition.

In the women's section it was again Liz Porter and Barclays winning, but Reckitt & Colman forced a tie for the team title.

Like most things that look easy, the standing long jump isn't. Giving a fine display of simplistic conceptual visualising was Heywood & Partners in the men's, with Sheffield Insulating second, and Heywood's number one, Bill Edwards, beating Crawford's Robert Hurst in the individual.

Reckitt & Colman took first place in the ladies' beating Barclays by a single point.

The last event before lunch was the team sprints, new this year and already a firm favourite. I like watching it anyway, although I suspect that actually *doing* it might be a different matter. It was Rowntree Mackintosh 1 which had most reason to enjoy it, with Crawford having to make do with a small crumb (sorry) of consolation in sharing second place with Rowntree's third team.

Rowntree 1 champion Tim Brandreth beat Dave Bruce and Robert Hurst in the individual competition.

Victory in the sprints saw Barclays' women's team with a handsome 30-point lead at the break, with Liz Porter pulling steadily away from the rest of the field.

Crawford 1 led the men's competition, five points clear of Rowntree Mackintosh 1, with Rowntree 2 three points behind.

Suitably refreshed after lunch was Heywood 1, beating London Borough of Lambeth in the 100 metres. Bill Edwards notched up his second victory of the day, with Geoff Clarke and Tim Brandreth being the runners up.

And surprise, surprise, it was the women from Barclays who carried on the way they had finished the morning session, taking victory in both team and individual sections.

The football dribbling managed, as usual, to eliminate several competitors who strayed out of bounds. It's usually those who really fancy themselves as footballers who fall foul of this one, due to overconfidence.

Heywood was not among these, nor was Barclays. Nor the women from Rowntree. Others weren't so lucky.

Now, my personal favourite event has to be the sit ups. I am eternally grateful that I don't have to do it – it's painful enough just watching. Gritting their teeth were the lithe lads from London, Lambeth. Number one Geoff Clarke scored a frightening 74, making sure of the team and individual first places.

Things weren't so clear-cut in the ladies' with Barclays and Crawford tying on 30 points, but it was again Liz Porter who won through in the individual contest.

And so, with one event remaining, it was Lambeth in front, leading Heywood by just three points. Barclays' women were well away, holding an unassailable 53-point lead over Crawford.

But a splendid performance by Crawford's first team in the men's 1,600 metres saw Heywood 1 and Lambeth relegated to second and third respectively, the end result being a tie for first place between Heywood 1 and Lambeth on 251 points. Crawford was next with 248. You can't get a lot closer than that.

Crawford's Robert Hurst beat Bill Edwards from Heywood's by 97 points to 91, and Liz Porter triumphed over Kathryn Gray with 94 points to the Rowntree champion's 79.

There was nothing close about the ladies' team result. Barclays scored a massive 279, compared with second placed Crawford's 196.

Due to the close competition in the men's teams, the top six go through to the UK final on July 23.

Gordon Cairns informs me that he is to select additional teams from the qualifying heats to join them there. So if you only just missed in your heat, you may be hearing from him and get the chance of a lifetime – meeting me at Birmingham. See you there.

Report and pictures by Andrew Thomas

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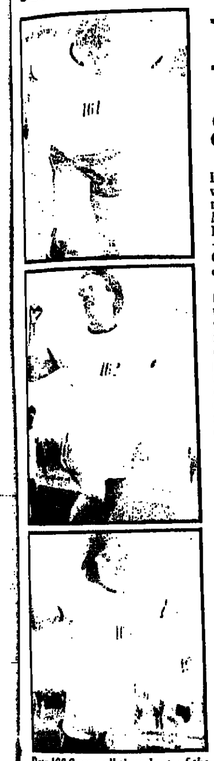

Data 100 2 won all three heats of the 100 metres. From the top: Steve Beaumont, David Williams and Richard Roach.

Mike Hawtree throws the medicine ball – no extra marks for pulling faces.

Janet Harrison in the hunt-the-contact lens event.

MEN'S TEAMS

Rank	Name	Points							Total
1	Heywood & Partners 1	31	27	33	18	37	33	33	39	251
2	L. B. Lambeth	25	21	31	36	34	31	37	36	251
3	Crawford Computing 1	28	33	31	39	31	18	23	45	248
4	Rowntree Mackintosh 1	27	28	26	45	31	14	26	42	239
5	Barclays Radbroke	26	30	24	30	29	33	31	33	236
6	Rowntree Mackintosh 2	34	30	29	30	29	23	28	30	233
7	Crawford Computing 2	23	22	29	18	29	14	29	33	197
8	Data 100 1	31	28	15	21	25	30	17	21	188
9=	Sheffield Insulating	28	19	32	30	24	18	14	21	186
10	Rowntree Mackintosh 3	23	27	14	39	23	24	15	18	183
11	Data 100 2	24	18	24	36	30	20	19	9	180
12	NCC	24	33	17	18	26	23	14	21	176
13	Crawford Computing 3	20	28	16	21	26	20	24	21	176
14=	Bahco Record Tools	15	21	29	15	25	21	26	24	176
15	Computerskills	22	25	18	27	31	15	22	9	169
16	Heywood & Partners	24	17	30	21	18	19	19	18	166
17	Computer Data Systems	24	31	22	18	22	24	19	12	162
18=	National Water Council	22	25	18	12	16	18	23	15	149
19	Data General	18	19	14	6	12	4	15	6	94

MEN'S INDIVIDUAL

Rank	Name	Points								Total
1	Robert Hurst	9	13	13	13	11	15	8	15	97
2	Bill Edwards	10	10	14	6	15	11	12	13	91
3	Timothy Brandreth	9	13	9	15	12	6	7	14	85
4	Geoff Clarke	8	6	8	12	12	12	15	12	85
5	Dave Cain	7	13	8	10	10	11	12	11	82
6	Mike Hawtree	7	11	9	10	11	9	9	10	76
7	Alan Meaning	14	14	7	7	11	12	4	7	76
8	Mike Milne	7	9	10	10	10	11	7	3	71
9	Derek Gardiner	8	12	8	9	12	9	8	1	67
10	Dave Bruce	7	9	7	13	8	7	10	6	67
11	Paul Wise	7	9	8	6	7	7	11	11	66
12	Gordon Algeo	7	6	7	7	9	9	5	6	64
13	Paul Wilson	9	11	4	6	6	5	8	7	59
14	Keith Taylor	7	8	6	8	5	6	9	10	59
15	Chris Addenbrooke	6	9	8	4	9	8	8	5	59
16	Peter Williamson	6	12	5	7	12	5	5	7	58
17	John Whitshaw	7	12	8	9	11	9	6	5	57
18	Steven Beaumont	5	8	8	6	12	10	5	7	56
19	John Layland	3	5	5	2	4	4	1	7	39

WOMEN'S TEAMS

Rank	Name	Points							Total
1	Barclays Radbroke	32	36	27	45	42	22	30	45	279
2	Crawford Computing	28	22	24	36	26	15	30	15	196
3	Reckitt & Colman	19	36	28	9	22	28	18	25	183
4	Rowntree Mackintosh	27	25	23	6	15	12	23	15	160
5	Heywood & Partners	11	11	17	30	15	12	16	6	118

WOMEN'S INDIVIDUAL

Rank	Name	Points								Total
1	Liz Porter	10	15	8	15	14	2	15	15	94
2	Kathryn Gray	5	14	15	3	11	2	10	6	79
3	Alison Forshaw	10	7	8	12	7	13	13	5	68
4	Dawn Hazeldine	9	14	6	2	4	13	8	2	58
5	Janet Harrison	4	5	7	10	7	10	5	2	50

Teams from left to right: Medicine ball, hockey, long jump, team sprints, 100 metres, football, sit ups, 1,600 metres relay. Teams in italics go through to the UK finals. S denotes a small mis-copy. No Commodores.

Robert Hurst wins the 1,600 metres – and the individual title.

Liz Porter appears to be dying in the sit ups, but it didn't stop her winning the individual competition.

It was all too much for some competitors.

Rowntree Mackintosh 1 captain Andrew Normandale heads off for yet another sprint.

Maria May thinks about doing another sit up.

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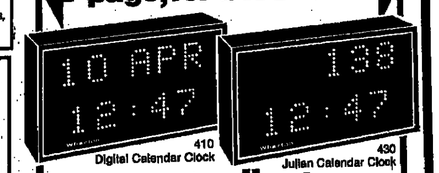

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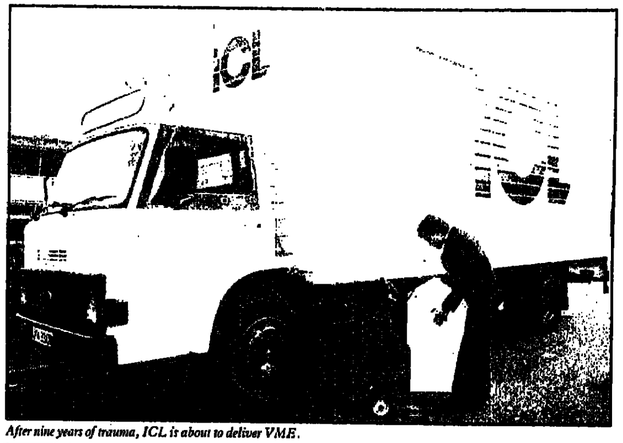
OPERATING SYSTEMS

ICL delivers VME—at last

ICL's VME operating system is due to become a mature working system in July after nine years of hiccups. Andrew Thomas thinks it was worth the wait



After nine years of trauma, ICL is about to deliver VME.

NINE years is a long time to spend getting an operating system right, but ICL has finally pulled it off with VME (Virtual Machine Environment). Next month it becomes a mature, working and coherent system rather than the collection of prototypes that it has been since 1974.

But, before the sneers or sighs get too loud, it is worth looking at the advantages that it now gives to the average 2900 user. If you're an IBM user you will probably find a lot to envy.

If you like IBM's MVS and you're used to its little idiosyncrasies, you've probably got a cosy team of systems programmers — about 15 who spend their time keeping it running.

But your friendly IBM salesman has convinced you that you'll have to take the big step and move into the future with MVS/XA.

This will be fun. Not only will the conversion job cost a small fortune, it will take about two years. Two years *real time*, during which period you'll be paying for two sets of operating software.

And the conversion itself will account for upwards of 10 man years programming effort. And two 308Xs, one to run the production workload, and one for the conversion. It will be fun. Fun for IBM, not you.

But before you swallow that bottle of Aspirin, consider the lot of those poor souls using ICL hardware. *They've* got the dead albatross of VME/B round their necks, haven't they?

Not exactly.

VME/B burst upon an unsuspecting public in 1974. It was billed as the facility-rich operating system for the new 2900 series, but soon became the butt of many a joke as it became clear that not only had the operating system been launched before it was ready due to government pressure, but the 2900 hardware then available was hard-pressed to build up enough steam to actually run the thing, as anyone unfortunate enough to have tried VME/B on a 2960 will tell you.

So, in response to popular demand, ICL fell back on its tried, trusted, and beloved George operating systems, introducing the DME emulator software enabling 1900 series software to run on the new machines.

VME/B, meanwhile was taken back into the workshops at Bracknell and emerged in 1979 in a new guise — VME/B-E. The E stood for Entry, but could just as easily have meant Easy.

VME/B-E was a packaged version of VME/B — one which would run even in the most hard-pressed of tiny 2900s. Things were getting better. And in 1981, things *really* started happening.

VME/K (the K stood for Kidsgrove) was announced in 1976 as a high performance operating system for medium sized 2900s — the ones that couldn't handle B (B for Bracknell). The brainchild of Ed Mack, one of then managing director Geoff Cross' signings, K rapidly took off and picked up a lot of fans.

In the watershed year of 1981, VME/K got the chop. In what seemed a ludicrous move at the time, ICL axed the popular 2900 native mode operating system and announced that all future developments would be based on the much-derided one.

The new operating system was dubbed VME 2900, and drew on elements of VME/B-E, VME/B, and VME/K. And it was very nearly there. The 2900 hardware had improved to the point where even the original VME/B would have run happily, and the facilities of B, the performance of K, and the ease of use of B-E, combined to give users an operating system good enough to convince even hardened George III supporters to change allegiance.

Since then, the number of VME sites has doubled to around the 900 mark, half being old-established B users, and half advocates of the hybrid VME 2900. But, whichever route users have followed, the operating system has become not only reliable, but easy to maintain.

Thus the support costs are reduced, and how. Remember those 15 systems programmers on MVS? Well, a comparable 2900 under VME 2900 typically needs two and a half. A small system, in the DOS/VS league, needs one and a half as opposed to five for the IBM system, some users getting the figure down as low as one person for half his/her time.

And, from next month, the operating system loses all its sufnine years, the system has come of age. Combining the facilities of B with the low support costs of 2900, realse eight will be sent to existing users as a normal upgrade. No upheavals, no conversion, no trauma.

Each customer will have the choice of using the full VME/B facilities or as a pre-packaged system to keep support costs down. But this isn't a once-and-for-all decision. The user can add or take facilities at any time.

ICL's stated aim is to provide as many facilities as possible, while holding costs down. Some of the cost reductions are significant:

- VME can run with NO operators. Try that with MVS.
- VME can run with a sixth the number of support staff of MVS.
- Packaged systems are on the way requiring NO local support.

Oh, and forget all those horror stories about VME/B being scrapped in 1992, and the resultant conversion of applications — VME/B is alive and well, inside VME — there is no need to phase it out at all.

And there is no pressure on the users to move to VME 2900. They will, of that there is no doubt, because the packaged approach is easier and cheaper in terms of people costs when developing new applications, but the old VME/B stuff can stay running happily as long as they want.

But what of those people who opted to stick with the 1900

After nine years, the system has come of age. Combining the facilities of B with the low support costs of 2900, release eight will be sent to existing users as a normal upgrade. No upheavals, no conversion, no trauma

operating systems on 2900 hardware? Advocates of George, currently running under DME, are now offered what was originally billed as CME — concurrent machine environment.

In English, that means the ability to run VME and 1900 operating systems in the same machine at the same time, the proportion being decided by the installation manager. Thus the 1900 workload could be run alongside the conversion and new development work under VME.

Sounds good, but there's one snag. CME/G3, the emulator providing an environment suitable for George III isn't available and now never will be. But don't give up hope. VME release eight combines CME and parts of VME in the microcode, meaning that you can run George III directly under VME from next year.

System 4 users are luckier — the last separate version of CME is about to be delivered, the next one, with the merged VME/CME microcode will allow them to run System 4 operating regimes and VME alongside each other.

And you may be interested to know that the new system can support *any number* of operating regimes concurrently, giving each of them access to the full range of VME facilities.

So if you have an operating system like MVS, which promises you an addressing limit of two gigabytes, as long as you can afford all the upgrades, you could, if you wanted, drop the MVS instruction set on to VME, and use its

PRODUCTS

Bill Butt, managing director of Digital Microsystems, shows off the DMS 1280K workstation.

HiNet workstation lowers network cost

A LOW cost workstation aimed at making the setting up and development of HiNet networks more attractive will be available from Digital Microsystems.

The DMS 1280K HiNet workstation is priced 33 per cent lower than the existing DMS entry level workstation. Cost is £1,425. An entry level network comprising a 1Mbyte network controller, a 160-characters-a-second printer and three 1280K workstations would cost £10,920.

The DMS 1280K has an integral HiNet computer board giving local processing power as well as high speed access to network data storage. The HiNet communications link gives the workstation the advantage of being able to access shared databases and shared printers.

As HiNet is capable of interfacing with the public telex network, communicating with ICL, IBM and Sperry Univac mainframes and supporting electronic mail facilities, the DMS 1280K has a wide range of facilities.

It is built around a Z80A processor and its memory comprises a 64Kbyte, dynamic RAM plus a 2Kbyte PROM monitor. Input /output channels are an RS232C console port 9600 baud (connected to the VDU) and an RS422 HiNet port under DMA control.

In-built self-diagnostic test modes selectable at the keyboard, including full screen memory check and all "display character set" check.

All circuits are contained on a single, plug-in, printed circuit board and all checkpoints are clearly marked for rapid servicing.

The 12in CRT screen is housed in a compact case and weighs 15kg.

Digital Microsystems (CE), Molly Millar's Bridge, Molly Millar's Lane, Wokingham, Berks RG11 2PQ. Tel: (0734) 793131.

Sperry tape subsystem offers high speed GCR

A TAPE subsystem, the Sperry 5055, with the Universo 26 and Universo 28 magnetic tape units, offering high speed group coded recording (GCR), has been introduced by Sperry.

The Universo 26 is a dual density GCR/phase encoded unit, capable of a tape speed of 75ips. The transfer rates are 480Kbytes per second GCR and 120Kbytes per second phase encoded.

The Universo 28 is also a dual density GCR/PE tape unit with a tape speed of 125ips, and a transfer rate of 750Kbytes per second GCR and 200/Kbytes per second PE.

Both units offer the operator the convenience of Easyload I and Easyload II cartridges with automatic loading for fast and efficient tape handling.

The tape subsystem can be configured with one to eight tape units and one or two control units.

The 5055 control unit allows the mix of Universo 26 and 28 units in GCR/PE modes, as well as Universo 22 and Universo 24 in PE/NRZI modes with the inclusion of an optional, nine-track NRZI feature.

The subsystem provides a dual channel option.

First customer deliveries of the subsystem are scheduled for November, 1983.

Sperry (CW), Sperry Centre, Stonebridge Park, London NW10 8LS. Tel: 01-965 0511.

Colour TI

MICROGRAPHICS has introduced a new capability for its M2000 range of colour terminals.

The M2000 family now offers full colour capability on TI 911 machines, emulating the TI 911 and 940 terminals.

Micrographics (CW), Futures Way, Bolling Road, Bradford. Tel: (0274) 727274.

The CP520MP is a multi-processing system.

Multi-processing system launched

THE CP520MP is the new multi-processing addition to the Comart Communicator range of modular microcomputer systems.

Supporting five users, the CP520MP, by incorporating six separate processors, overcomes the major problems of most multi-user and shared network systems, such as processor degradation, time delays and the lack of true CP/M compatible, multi-user application software.

In common with other Communicators, the CP520MP is based on S100 bus architecture and includes storage capacity for up to 11,000, double-spaced A4 pages of information, whilst offering fully compatible expansion of disc storage capacity plus back-up modules.

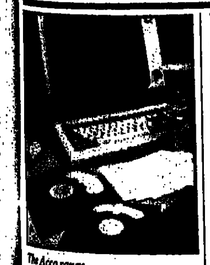
This powerful multi-processing system incorporates a host CPU and memory, providing central file handling and other resource scheduling, plus over 20 Mbytes of floppy and hard disc storage capacity. The system also includes "slave" single card computers for each user, incorporating a dedicated Z80A processor, 64 Kbytes of individual memory and serial, RS232 and centronics compatible I/O ports. Data is transferred between the slave cards and the central processor at speeds of up to 1.6 megabits per second.

Each individual VDU is attached to its slave in the MP system via serial interfaces and each workstation runs CP/M applications independently. In this five-user configuration, two workstations, for example, could be allocated to wordprocessing, one to financial modelling, one to order processing or accounts, and the fifth to updating databases, while all users share printer facilities and data from common disc storage.

The shared data is automatically protected and printers may be controlled by the central processor and shared, or permanently allocated to a specific user, under system software control.

The CP520MP costs £6,995, including all multi-processing and CP/M system software. A typical end-user configuration, including five terminals, costs under £11,000.

Comart (CW), Little End Road, Eaton Socon, St Neots, Cambs PE19 3JG. Tel: (0480) 215055.



The Acco range.

Clean and maintain

CLEANING and maintenance products introduced by Acco include a computer terminal screen and keyboard cleaning kit that gets rid of static. It comes in a pack with lint free wipes and costs £5.

The drive head cleaning kits in the and 5¼in drive versions contain two reusable cleaning discs in special jackets, plus a spray-on container of a special formula cleaner. Price is £19.

Acco has also introduced a filter to reduce reflections and glare from VDU screens. The Accodata Screen Filter removes up to 80% of glare without loss of image quality.

Filters are available in a wide range of sizes to fit most screens, from £27.50. A sticky roller cleaner makes sure they remain free from coating £2.30.

Acco Company (CW), Beetton Peterborough.

HTE products make communication simple

HIGH Technology Electronics has introduced two new products that make communication between S100 computers simple, the Modem 100 and Prattle.

The Modem 100 provides a complete autodial viewdata modem and display on an S100 card. It features 1200/75 and 1200/1200 V23 protocol, together with a full colour output display.

The card is intelligent and incorporates on-board memory and real-time clock. It also uses the 8749 microprocessor with 2Kbyte preprogrammed ROM and 2Kbyte screen RAM. A calendar clock chip allows for timed autodial.

The Prattle (Programmable Receive and Transmit Telephone Line Equipment) S100 modem, using the Z80 processor, provides most of the modem functions required for current public switched telephone network communication. Seven modes of operation are available, including Prestel, 1200/1200, 600/600 and 300/300 baud rates.

On-card firmware includes ROM and RAM program for modem buffering, autodial and answer, etc, via single byte commands. The circuitry, incorporated in a single S100 card, interfaces to the bus via a pair of ports.

Both products are designed and built to full IEEE 696 S100 specification.

Current prices are £695 for the Modem 100 and £495 for the Prattle.

High Technology Electronics (CW), 303-305 Portswood Road, Portswood, Southampton, SO2 1LD. Tel: (0703) 581555.

Hawke launches Compass range of Winchester discs

HAWKE Electronics has launched the Compass range of Orion and Orion Plus Winchester Discs for the DEC LSI 11.

The Compass Orions are DEC service approved and may be commissioned and maintained by DEC personnel.

Using 5¼in Winchester drives, the Orion and the double capacity Orion Plus will run under DEC operating systems RT11 and RSX11. A whole range of configurations is offered to permit the discs to emulate RK05, RL01, and

All Orion Winchesters are supplied with an automatic test feature which starts on-board diagnostics to be run on the controller each time the Q-Bus is initialised. A hardware bootstrap is also available on the controllers.

The discs are housed in a 3½in high cabinet, table-top or 19in RETMA rackmount, with cables, power supply and Q-Bus controller.

Hawke Electronics Ltd (CW), Amotex House, 45 Hanworth Road, Sunbury-on-Thames, Middlesex. Tel: 01-979 7799.

Director 2000 can be rack-mounted or free-standing.

Director 2000 cancels need for paper tape

DIRECTOR 2000, a compact microprocessor-based unit, has been developed by N. C. Riter to eliminate the need for paper tape, and thus the many problems associated with it in both NC and CNC applications.

The unit, which has 48 Kbyte of local memory and a further 512 Kbyte of cassette storage, is retrofittable to a wide variety of control systems, and comes in either a free-standing or rack-mounted version.

The Director 2000 links between the host computer and up to four different machine tools via an RS232 serial interface or a BTR (behind tape reader) parallel interface to give powerful local intelligence for programs creation, editing and full DNC capability.

Local data entry can be made via a standard alphanumeric VDU and keyboard, or via a graphics terminal when visual representation of component shapes and cutting paths is required.

DNC with the Director 2000 has two major benefits: NC data can be transferred directly from the host computer to the machine tools without the need for paper tape; and management information and technical data from the shop floor can be fed back via the computer to other departments.

The Director 2000, which will interface easily with any existing computer system or CAD/CAM system using an RS232C or a fibre optic interface, costs between £3,000 and £4,500 depending on software requirements.

N. C. Riter (CW), Alexandra Way, Ashchurch Trading Estate, Tewkesbury, Glos. GL20 8NB. Tel: (0684) 298774.

Nicolet adds to drum plotter range

NICOLET has made an addition to its range of high performance, intelligent drum plotters, based upon the Nicolet Zeta 8. The new Zeta 822 is a plotter able to handle A1 size plots which makes it useful to the engineering and CAD system user.

Its ability to handle down to A4 in eight colours will find it acceptance in the business graphics centre, says the company.

The Zeta 822 is an eight-pen plotter that can accept both continuous feed and cut sheet media. It supports cut sheet sizes from A4 to A1 and also American A to D, while its ability to handle continuous feed material allows the creation of plots up to 50m in length.

It is able to plot on translucent paper, tracing paper, glossy bond, mylar and clear film for overhead slide presentations.

A high throughput is achieved by using eight, capped pens on one microprocessor-controlled carriage. This feature contrasts with the one-pen approach, where the pens are stored at the side of the plotting surface and must be individually picked up and replaced.

The Zeta 822 plots at a speed of 63.5cm per second.

A liquid ink facility is available which provides the user with four, carriage-mounted liquid ink cartridges. At the push of a button the Zeta 822 will automatically adjust acceleration, pen speed and pressure to give optimum quality for liquid ink plotting.

Price is £9,950 with OEM and quantity discounts available.

Nicolet Instruments (CW), Budbrooke Road, Warwick CV34 5XH. Tel: (0926) 494111.

PRODUCTS

Make printers more intelligent

THE SB 451 printer driver board provides additional intelligence to the Epson range of printers that enables barcode printing. It is compatible with the Epson printers and allows simple plug-in installation.

The full ASCII character set may be printed in barcode form via the standard Telepen barcode. Two styles of print are selectable giving densities of up to 10 digits an inch.

Barcode printing speed is from five to 27 barcodes a minute.

The SB 451 board is available in serial or parallel data transmission versions at speeds from 110-9,600 baud. The serial version allows existing Epson parallel interface to be used as well if desired.

SB Electronic Systems (CW), Arden Grove, Harpenden, Herts. Tel: (05827) 69991.

Buy Hitachi disc drive from ESI

ESI Components has introduced a mini floppy disc drive from Hitachi.

Compatible with previous models, the HFD505A features a storage capacity of 0.5Mbyte. It is suitable for use in office automation equipment, such as personal computers, wordprocessors, and intelligent terminals demanding compact size.

ESI Components, Brighton Hill Parade, Brighton Hill, Basingstoke, Hants RG22 4EP. Tel: (0256) 57166.

The ET550 is designed for the executive's desk.

The VDU meant for executives

NEWBURY Data's Executive Terminal is a 5½in visual display unit designed for the executive's desk and for an on-the-counter enquiry terminal in banks, post offices and building societies.

Priced at around £350, the basic ET550 model comprises a 5½in cathode ray tube in a 45°×90° tilt and swivel head; a 7×10in base unit housing the Z80A microprocessor-controlled logic board, power supply and RS232C interface; and a moveable numeric key pad.

It incorporates a special non-glare screen and a high refresh rate of 100 cycles per second to obviate eye strain. The screen displays sharp, stable characters, each cell occupying an 8×11 dot matrix, allowing a maximum of 12 lines by 40 columns.

More advanced versions are planned offering alphanumeric keyboards, programmable function keys, zoom, printer and Prestel interface ports. Special customised versions will also be available.

Just 10in high and occupying little more desk space than a telephone, the ET550 comes with a standard RS232C port for full or half duplex transmission, at any two pre-selected speeds between 600 and 9,600 bauds.

Newbury Data Recording (CW), Hawthorne Road, Staines, Middlesex TW18 3JB. Tel: (0784) 61500.

Rapid Terminals' daisy printer has universal interface

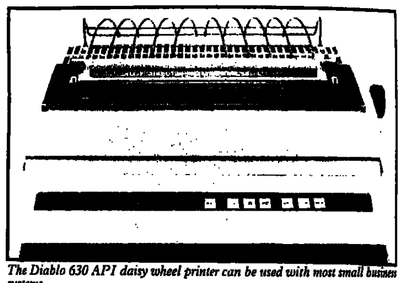
RAPID Terminals can supply a new daisy wheel printer with a universal interface known as the Diablo 630 API straight from stock. It is a high-performance, 40-character-a-second printer designed for use with most small business systems and personal computers currently on the market.

Interfaces included as standard are Centronics, IBM, Apple II, Hewlett-Packard, ADDS, NEC, Superbrain, RS232C and IBEE 488.

No adaptor boxes or adjustments are needed when connecting the host system to the 630 API. Firmware within the printer senses the type of connection and automatically configures itself accordingly.

An interface control panel incorporates all the functions required to control the printer including reset, form feed, scroll, line feed and pause.

Switches under the print mechanism access cover select either plastic or metal daisy wheels, baud rate, parity, self test and transmission protocol. When in the IBEE 488 parallel mode the baud rate, parity and protocol switches are automatically redefined to serve as primary address switches.



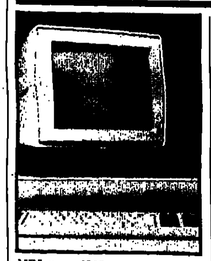
The Diablo 630 API daisy wheel printer can be used with most small business systems.

The 630 API printer mechanism is the same as employed on the 630 and 630 ECS machines.

Its most widely used application is with wordprocessors, where high quality printing is required on a wide variety of single or multi-part stationery. A choice of pin feed or friction feed platens is available, together with accessories allowing bottom, front, bidirectional or single cut-sheet feed.

The printer has been designed to be reliable. The meantime between failure is 2,500 hours at 25% duty cycle. If a fault does occur, the modular design of both electronics and mechanics enables a service engineer to get the machine up and running within half an hour.

Rapid Terminals (CW), Rapid House, Denmark Street, High Wycombe, Bucks HP11 2ER. Tel: (0494) 26271.



NBI system 4000.

NBI launch streamline workstation

NBI has introduced a new series of streamlined, office automation workstations, the Office Automation System 4000 Series.

The System 4000S stand-alone model and the System 4000 shared resource workstation are designed to maximise operator comfort and productivity. They will fit on a 48cm surface, the size of a standard typing table.

They are designed with modular, flexible components and ergonomic features include: operator adjustable tilt/rotate video displays; low profile, sculptured keyboards; etched and tinted anti-glare screens; and reverseable black-on-white, black/amber or black/green screens.

NBI (CW), Rummel House, 33-39 Savile Row, London W1X 1AG. Tel: 01-434 3521.

Plotter controller can be used with Tektronix terminal

CALCOMP has introduced an on-line plotter controller – the 907T – which, for the first time, claims the company, allows users of Tektronix 4110 Series intelligent graphics terminals to produce full size preview plots, up to and beyond AO size, on a CalComp plotter, direct from their terminals, using their existing Tektronix Plot 10 software.

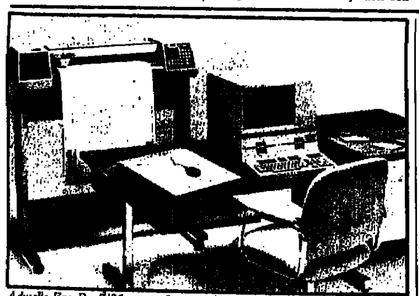
A microprocessor-based device, the 907T functions as an intelligent interconnection between the plotter and the graphics terminal and also a host computer. In addition, it provides internal line, circle, arc, dashed line and character generation, plus 192 downloadable symbols for output by the plotter.

It can drive most CalComp drum plotters and can be supplied as a field upgrade to an existing plotter, or as an integral part of a new system.

It can be connected to a special port on a Tektronix 411X-terminal and allows background plotting of plot segments held on disc at the terminal in Tektronix 4100 format.

Alternatively, plot files can be re-routed back through the host computer from the terminal and out to the plotter via a separate port, using CalComp's Industry-standard Host Computer Basic Software (HCBS) to take advantage of the higher resolution of a CalComp plotter compared with a graphics terminal.

CalComp (CW), Cory House, The Ring, Bracknell, Berks RG12 1ER. Tel: (0344) 50211.



Admel's EasyDraf²/36 system features the 68,000 microprocessor-based computer.

Admel introduces draughting system

ADMEL has introduced a low cost, turnkey computer-aided draughting system.

The new stand-alone system is named EasyDraf²/36, and uses the Hewlett-Packard HP9836A computer. It is easily expandable to 12 workstations and common drawing data base via a shared resource manager and a variety of printers, plotters and hard discs of up to 132Mbyte.

The system can be upgraded to interface with planned bills of materials, numerical control and three-dimensional modelling packages.

EasyDraf²/36 will have a data base compatible with the original EasyDraf²/45, which will continue to be marketed, updated and upgraded.

Implemented in compiled Pascal and powered by the fast and reliable 32/16bit Motorola 68000 microprocessor chip, set running at 8MHz, the system draws and redraws quickly and is also rapid in calculation and manipulation.

It is available in monochrome and colour versions and Admel plans to market a minimum configuration entry level workstation at £25,000, including installation, commissioning and training.

Admel (CW), Brooklands Road, Weybridge, Surrey KT13 0RL. Tel: (0932) 47212.

Matrix personal printer

EPSON Corporation's FX-80 matrix printer, suitable for personal computer attachment, is now offered by authorised Epson distributor Peripheral Hardware.

The Epson FX-80 prints at 160 characters a second and offers advanced text features such as bidirectional logic-seeking printing, proportional spacing, sub- and superscripts, user-defined characters and downloadable character sets. High-resolution, pin-addressable graphics are available and there is a special quiet printing mode.

The printer accepts fanfold paper, roll paper and single sheets, with adjustable sprocket feed and friction feed.

A wide range of optional interfaces is available from PHL, including RS232, IBEE488, XON/XOFF, TRS-80, Pet and Apple II.

Peripheral Hardware (CW), Unit 13, Monkspath Industrial Park, Highland Road, Shirley, Birmingham B90 4NY. Tel: 021-745 3033.

Bank system stands alone

ARBAT has introduced a stand-alone version of the interactive foreign exchange and money markets functions of its series 700 banking system, which runs on Digital's VAX and PDP-11 computers.

This foreign exchange and money markets system provides the trading and operational areas of international banks with specially designed terminal equipment, which interfaces with external rate and information services such as Reuters, Telerate and AP-Dow Jones while providing the dealer with rates, positions and credit control data in realtime.

The system also handles statutory returns. A powerful report generation facility produces a wide variety of regular and ad-hoc reports.

The special requirements of offshore banking centres are all catered for.

Arbat (CW), 160 Queen Victoria Street, London, EC4. Tel: 01-248 6499.

Store floppy discs in safety

STRAKER Office Supplies has added a safer, easier way of storing floppy discs, to its range of computer accessories.

Styled in chocolate brown with a transparent lid for the easy identification of contents, each new storage box measures 350 × 200 × 165mm and will hold up to 80, 5¼in discs.

The secret of the disc storage system lies within the clip and retaining bar mechanisms.

The antistatic wallet of each disc is fixed with two clips, which enable it to be suspended along both inner edges of the box.

The retaining bar is then flipped over and the wallet and disc held securely in place.

The box is lockable for added security.

Straker Office Supplies (CW), 13 Artillery Row, London SW1. Tel: 01-222 1301.

Digitec printer.

Printers use plain rolls

THE 6600 series of Digitec Panel Mount Printers, now available from Aviquipo, uses plain, inexpensive paper rolls for low cost and clear, no-mess, no-fade reproduction.

The four models of printer are microprocessor-controlled, compact and provide 24 column dot matrix printing.

Aviquipo of Britain (CW), St Peter's Road, Maidenhead, Berks SL6 7QU. Tel: (0628) 21555.

Mator adds to Shark units

MATOR Systems has made an addition to its Shark intelligent hard disc data storage units.

The 5¼in models provide users with economically-priced storage in the 10 and 15Mbyte range and form a complement to other Shark units, which extend up to 120Mbyte in capacity.

Mator Systems (CW), 134-140 Church Road, Hove, Sussex. Tel: (0273) 720451/2.

APPOINTMENTS

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Our client, a systems house, specialises in industrial projects world-wide ranging from system specifications and design to turn-key installation.

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Daytime – Elaine Collis on 01-491 4706. Evenings and Weekends Richard Kaluzynski on 01-840 1169.

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01-491 4706
DoE Reg No SE(A) 1015

Announcing Hunterskil South
From June 30th

From 30 June the doors of a brand new computer staff company open here in Maidenhead. Called Hunterskil South we're the latest addition to the Hunterskil Group of companies – one of the biggest computer staff organisations in the country. The group includes Knight Computer Services Ltd, H Programming and Systems Ltd and Hunterskil International

Our aim is to provide contract staff in the areas of Systems, Programming and Operations and we'll be concentrating our efforts in

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Although a new company, we'll be run by some of the most experienced people in the business, able to call on the resources of one of the most respected groups in the UK. Our client list is impressive and demand for our services is increasing. So if you're interested in contracting in the Thames Valley or already on contract here, give us a call or send your c.v. you could find us very rewarding indeed.

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Phone me, Nick Gill, in Maidenhead.

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For further details please call **Daytime – Bridget Kotchie on 01-491 4706 Evenings and Weekends Richard Kaluzynski on 01-840 1169.**

Operations

ICL ME29/TME OPERATORS £7,500 – £9,000 – LONDON

Good ME29 background and ability to write JCL for various positions in and around London. Ref: OPS 1137/47/49

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IBM 4341 £6,500 – BUCKS

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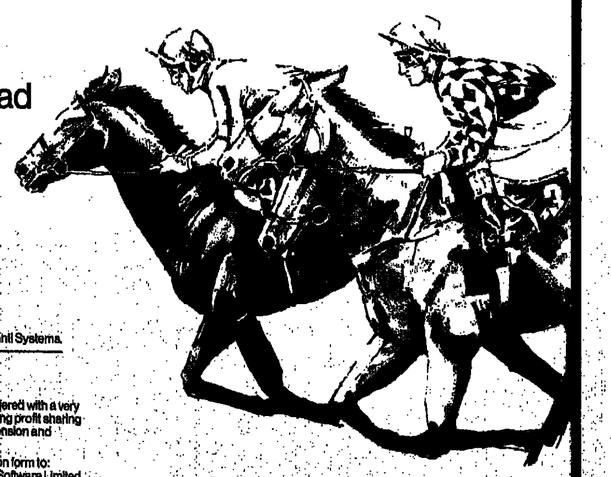

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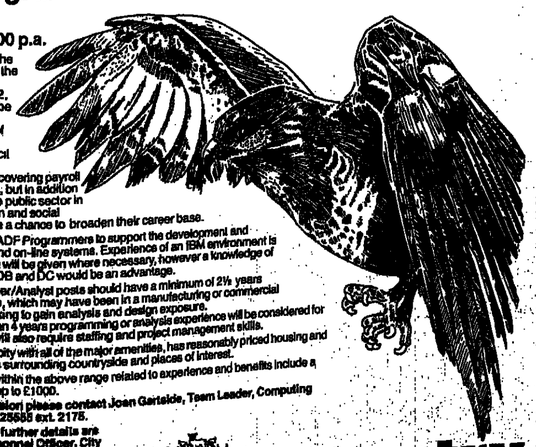

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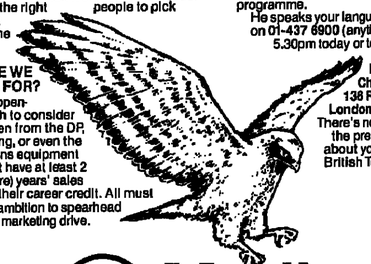

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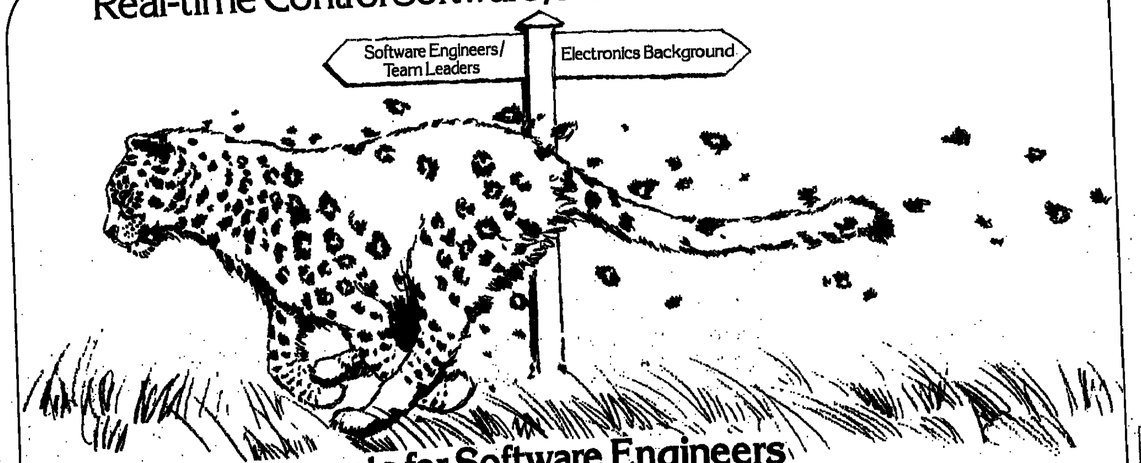

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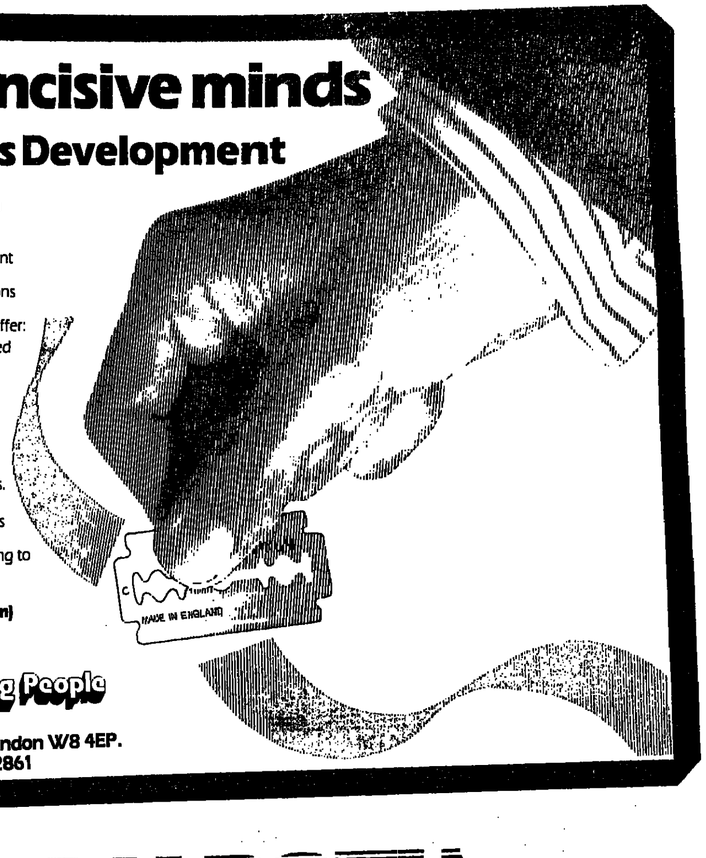

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Applications Software Programmers — **c.£550**
Z.80 CPM

Assembler/BASIC on Z.80 or similar Micro hardware is required for Financial, Banking, P.O.S. and commercial applications. Some French ability and hardware experience would be ideal. To start August 1983.

For further information please telephone Roger Allington or Peter Henrick on 01-493 2947, (to 9pm, Monday-Friday) or weekends respectively, Little Gaddesden (044284) 3536, 01-390 1640, quoting Ref. 9986.

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Sales Executive

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Berisford Information Technology is a wholly owned subsidiary of S&W Berisford PLC – one of the UK's largest and most successful Organisations, with a turnover in excess of £2,500 million generated by over 250 diverse world-wide companies.

BIT is responsible for computing and communications within the Berisford Group and, as such, has gained experience of many manufacturers Systems including ICL, IBM, DEC, Data General, Computer Automation, Olivetti and Tandem.

In October 1982 BIT began to market its expertise to external users and has already established sales and support bases in London and the North.

They are now an ICL trader point and are regularly announcing additional hardware and software products – such as Epson and Tandem distributorships – with a view to developing a range of business solutions that cannot be matched elsewhere within the industry.

They possess the financial resources to validate their dramatic growth plans which include the opening of further branches throughout the country.

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Your success will be rewarded; as BIT continue to expand their operations throughout the UK, consequently the ambitious individual can look forward to fast career development and a consistently high level of earnings.

For immediate consideration and for further detailed information on the Company's products, organisation and current requirements please contact **Ian Goldsmid** on **01-935 0671** during office hours, alternatively send your Confidential Career Resume to the London address below.

Technical Sales & Management Appointments

Specialist Computer Recruitment Ltd

(4379)

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021-236 3781

NORTH
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061-833 0427

BELGIUM
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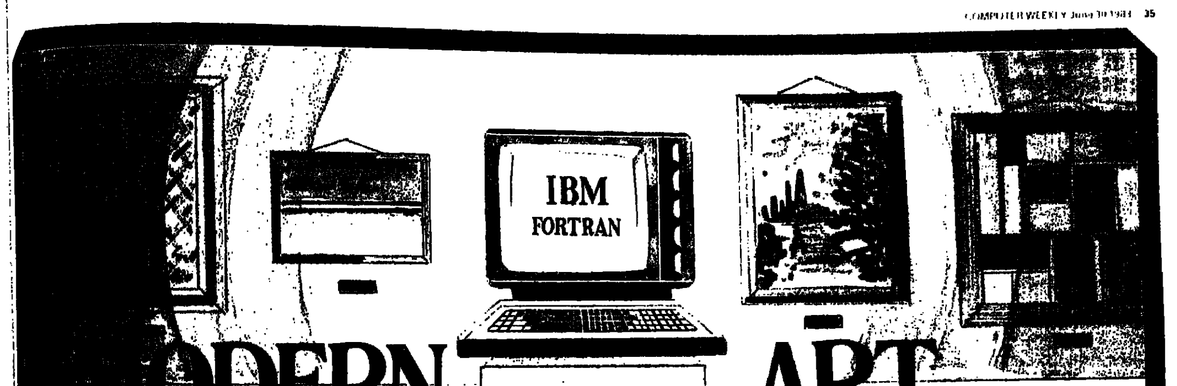
010 322-640 7151/71

HOLLAND
Willemsparkweg 92, 1071 H.M. Amsterdam
010 3120-760947



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Langton Electronic Publishing Systems is an established but fast expanding systems house specialising in information management.

As a stable and profitable organisation they cover areas such as text and graphics, demand printing, viewdata, on line retrieval systems, optical and video discs and computer assisted retrieval and delivery systems.

With a sound investment in the future they have a continuing research and development programme ensuring their product lead in the international markets.

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- ★ Bonus Scheme
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- ★ Flexitime

For an informal discussion regarding these opportunities please telephone Miles Richards on 01-938 1804 (24 hours) or 01-847 2385 (7pm – 9pm).

Programmer to £10,000
Analyst/Programmer to £12,000

To complete their first phase of expansion they now seek two highly motivated individuals capable of integrating fully into small and friendly project teams. The products that you will be involved in manage databases of graphics and convert CAD and scanned illustrations to publishing devices.

IBM Fortran is essential with IBM VM CMS and OS preferred. Any experience in IBM Assembler and DEC VAX would be advantageous.

It is envisaged that for the right person joining as an Analyst/Programmer there would be early promotion to Project Leader.

At the Programmer level opportunities already exist for dedicated professionals to gain greater responsibility.

IPP Information Processing People
20 Kensington Church Street, London W8 4EP
Telephone 01-938 1804 Telex 22861

(4375)

GSD SOFTWARE HOUSE

Software House seeks **IBM System 34** and **System 38** Programmers/Analyst Programmers to work on challenging new projects in London and surrounding area. Successful applicants with two years' + RPGII or RPGIII will substantially increase their present salaries, their technical knowledge and their career prospects with this established and rapidly expanding company. Ref. A1

INSURANCE IN THE CITY

This company, a major force in the International Insurance Markets, is currently seeking **Analyst/Programmers** and **Systems Designers** to work on their IBM mainframe in the City. Your COBOL or PL1 programming background combined with some experience of Analysis and/or design will command a salary of up to £13,000. Ref. A2

IMS OR CICS? £9,000-£13,500

Our client, based in West London/Middlesex utilizes dual **IBM** mainframes and is seeking to recruit **IMS** or **CICS** Analyst/Programmers for a variety of development projects scheduled for 1983/4.

COBOL, PL/1 and **APL** are all used within the data processing department and a minimum of two years' programming expertise with **IMS** or **CICS** is required in order to enjoy the numerous company benefits offered by our client. Ref. D1

COBOL PROGS & ANALYST/PROGS £7,000-£11,000

The systems development team within this successful London based company is constantly expanding in order to meet demand from its UK subsidiaries. Hence our client is seeking to recruit a number of COBOL professionals keen to progress their career in an **interactive, database** environment.

Candidates should possess a minimum of 18 months' mini or mainframe **COBOL**. You will be given the opportunity to join a friendly team within a challenging environment and learn new techniques. Ref. D2

SENIOR IBM PROGRAMMERS To £13,000

This dynamic Services organisation based on the Bucks/Berks border is seeking to appoint several Senior Programmers offering at least two years' experience in **PL/1, 370/303n COBOL** or **8100 COBOL**. Applicants should possess knowledge of Database and/or TP and be confident to assume responsibility for small projects when required. Self-motivated individuals will enjoy the fast moving environment and be rewarded with high salaries and quick promotion. Ref. K1

YOUR 2nd JOB To £10,000

With at least two years' **COBOL** programming experience, our client can offer applicants an excellent career move into an Analyst/Programmer role at their **IBM 4331 DOS/VSE** installation in **NORTH SURREY**. Good IBM knowledge, experience of VSAM and the ability to liaise competently with users will provide you with the opportunity to join a stimulating DP environment working on Stock and Financial Recording systems.

A good range of benefits also apply. Ref. K2

SYSTEMS ANALYSTS – YOUR NEXT PROJECT

If you can offer at least two years' commercially based systems analysis experience then our client, a very successful financial organisation, could offer you the opportunity to join an on-line, distributed processing system development based upon very powerful minis linked to a mainframe. Career development to the business analyst role exists and a commencing salary of c£10,000 can be expected for this company based in **NORTH SURREY**. Ref. R1

COBOL, CICS & DL/1 To £10,000

Our client, located in the **CITY OF LONDON**, is seeking to recruit **PROGRAMMERS** or **JUNIOR PROGRAMMER/ANALYSTS** to join their CICS DL/1 project environment. The people appointed can look forward to gaining exposure to program design and analysis to provide them with career progression. If you can offer around two years **COBOL** then telephone us now to progress an application. Ref. R2

These are just some of the career opportunities that we are currently assisting our clients to fill. We would be pleased to talk to you regarding these and many other vacancies that we are currently aware of. Telephone one of our consultants to discuss your particular requirement and how DP Selection can help you.

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7 Swallow Street, London W1R 7HD
"We look forward to hearing from you."

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(24 hour Ansaphone)

(3124)

CAP

DP CONSULTANTS TO COMMUNICATIONS INDUSTRY

Central London — To £17K

CAP's Industrial Branch in London is currently engaged in developing software for a number of highly innovative applications for the communications industry. Examples of these applications are Electronic Post or systems involving real time data acquisition. We are looking for staff with at least 8 years software experience of large commercial or industrial systems, preferably in BT or the communications industry, to assist with these projects and in marketing and selling. Good design experience is essential, together with an awareness of developments in communications fields, such as standards (OSI, X25 etc.) LANs, office automation etc.

CAP is a stimulating company in which to work, and boost your career. We have developed robust methodologies for analysis, design and development of software and are currently engaged in a number of software productivity innovations. Ref. MB 2/01

John Libbey & Company Limited

ANALYST/PROGRAMMER

An opportunity for influence and involvement — Salary £9-£10,500

We are an established, small bureau looking for an experienced analyst/programmer to take charge of all development work on new systems, communications with client sites and for internal accounting and order processing suites for our own company's medical publishing.

We have recently re-equipped with a medium sized Datapoint ARC network, operating under DOS. Whilst we use Assembler coding in the main we are now starting to develop datashare systems using Databus. The company's business areas, which are starting to expand rapidly, concern publishing, mailing and membership systems. We are well advanced in the creation of a new, interactive subscription system and current projects include a book sales order system related to a marketing database. We are also very interested in computer phototypesetting both for our own use and to offer to clients.

In all we currently employ a dozen people and we are therefore looking for somebody who appreciates the advantages of working for a small firm, in particular the involvement with decision making and the possibilities for real commitment and influence on the direction of the company's actions. We are conveniently located in S.W. London. A broad previous experience will be very helpful together with the maturity to work independently. Ref. MB 2/02

To Apply: For further details please telephone Ken Allwright on Maidenhead (0628) 36823, or write in strictest confidence (quoting the reference number) to C.L.I. Recruitment Advertising, 27 Marlow Road, Maidenhead, Berkshire.

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Business Systems Advisor

Good salary with excellent benefits and an outstanding relocation package

Our client, a highly successful computer user, is based in a very attractive area of the South Coast of England. Their wide use of computing over a wide range of hardware from mainframe to micro is beginning to play an important part in both user thinking and demand. Because of this demand they now wish to recruit someone to work as a Business Systems Advisor. An unusual and particularly interesting position, the job requires someone with either a good business systems, an O & M or an OR background, to advise people at a variety of levels of seniority on the development of systems.

The responsibilities are very broad, but in general terms will necessitate significant liaison with users to determine business solutions to their problems. The majority of solutions would probably involve some kind of computer aid, and therefore a knowledge of micros and word text processing from the conceptional point of view is a useful asset. Ensure that they agree and accept the solutions presented, and at the same time where necessary discuss with the computer systems group the user requirements.

If you feel your experience and interest is in the business area and you have a broad technical base, then we would like to meet you.

Without doubt, this is a very interesting opportunity and will allow someone over a period of time to develop a very interesting career. We would like to emphasise that we are looking for someone who is primarily interested in helping to determine the basic framework of an integrated technology based system in a diverse business organisation.

If you are interested please send a curriculum vitae, giving contactable telephone number.

RECRUITMENT LIMITED
Sentry House, Frimley Road, Camberley, Surrey.
Tel: Camberley (0276) 29213. (24-hour answering service). Telex: 858386.

(4353)

Sales Executives
U.K. Wide
£27,000K + Car
With an established track record in either the manufacturing, communications or automated office environment, you are now ready to join a market leader selling into major accounts, users and government bodies. Substantial increased earnings are easily achievable.
CONTACT TIM BRIDGES

Senior Sales Professionals
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CONTACT JEFF BOWMAN

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Hertfordshire
To £13,000K
Data Comms real time programmers are required for this manufacturer. We are interested in hearing from candidates who wish to advance their careers into one of the following specialisations — comms processors, mainframe protocols, X.25, PAD, LANs.
CONTACT TIM BRIDGES

MKA PERSONNEL LIMITED

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MKA have the jobs and the experience to advance your career.
Below are a few positions — we have many more — so for you it will be a question of choice. Ring now and talk about the future.

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£8,000-£14,000K + Car.
Recent extensive additions to their existing services have created, for our client, a need for a range of staff from programmers, designers and software specialists to support roles. Candidates should have experience (6 months+) of using PRIME systems in any one or more of these capacities, covering commercial, technical, automated office or scientific applications.
CONTACT DON KNAGGS

Senior Consultants West Country
£15,000K
Required to work in real time environments in communications, process control and defence industries on an interesting variety of projects. Candidates should possess a relevant degree/HNC or HND and have experience of one or more of the following languages; CORAL/PASCAL/FORTRAN/RTL.
CONTACT KEITH PENGELLY

Software Engineers/Designers/ Programmers
London/Berkshire/Wiltshire/UK
£8,000-£14,000K
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If you have two to four years' experience or more and ideally a HNC/HND or degree then this rare opportunity should not be missed.
CONTACT
KEITH PENGELLY
TIM BRIDGES

Project Leaders
Home Counties
£12,000-£16,000K
A prestigious client is seeking Project Leaders with current expertise in the specification and design of software, through to NC systems. A background in engineering, coupled with NC and mechanical design, is vital for these exacting roles in a dynamic company with an exciting new product range.
CONTACT JEFF BOWMAN

KEITH PENGELLY (Home Tel: 0242 672318)
JEFF BOWMAN (Home Tel: 06840 3477)
DON KNAGGS (Home Tel: 0562 744 736)

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Programmers with 2-3 years' experience in a systems software environment or a technical/scientific applications area who wish to move into systems software. You will have the opportunity to develop your career towards a team leading role

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Four to six years' experience with exposure to systems software development and the potential to run a small team. Opportunities exist for promotion to a section leaders position.

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Cwmbran Gwent is set in beautiful undulating wooded countryside, within easy reach of the M4 to the south and the Brecon Beacons National Park to the North.

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For further information telephone Ferranti's recruitment consultants asking for **Leofric Kingsford-Smith** on **021-643 8501** or **0272 292966** or **021 353 4460** (eve/wknds). Alternatively simply complete and return the freepost coupon to **Computer People Midlands, Freepost, Alpha Tower, Birmingham B1 1BR.**

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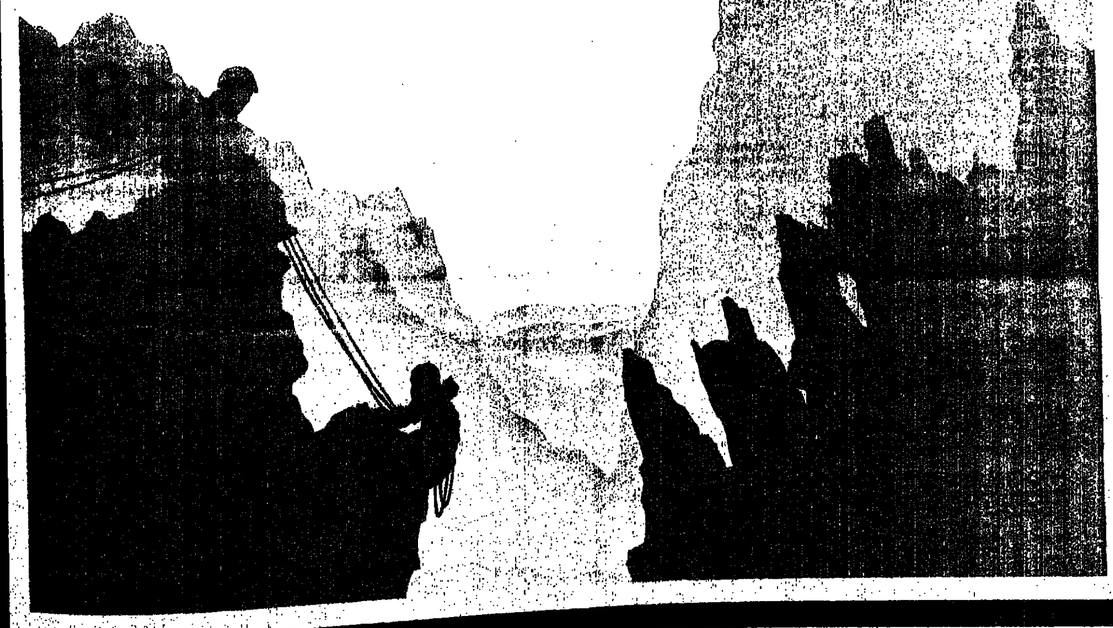

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We are looking for high calibre engineers with microprocessor logic design experience. Educated to degree/equivalent standard with a minimum 2 years experience of M68000 and/or Z80 and specialist knowledge of one or more of the following:—

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c. £7,500

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THE JOB:	To assist Computer Services Manager to maintain existing programmes and extend computer utilisation within the Company.
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Tel: (0789) 68411

(4384)

SUPERVISOR

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Are you over 21, mature, with at least 5 'O' levels and interested in a computer based career? If so, we will train you to operate our new COM Recorder – one of the fastest growing data processing areas. You must have some previous data processing experience. You will be involved with program development operational processing and scheduling. Salary commensurate with experience. You can expect your career to develop rapidly in this small but expanding company

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(4443)

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Share in continued growth of this successful company. Using DEC VAX/PDP11 you will be working on application systems for turnkey projects with considerable customer contact. Your drive, ideas and enthusiasm will be well rewarded. Ref: 01112.

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PROGRAMMER/ANALYST BRACKNELL £11,000
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You will design, write, test and integrate Assembler and Coral 66 software on a range of hardware with the satisfaction of following projects from beginning to end. Benefits package includes relocation costs where appropriate. Ref: 01143.

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(4430)

The IBM SYSTEM 34/36/38 Recruitment Specialists

System 34/36/38

March Computer Recruitment has been formed to provide a comprehensive professional recruitment service for users and personnel specifically involved in the IBM GSD sector of the industry.

Users seeking a solution to the problems of recruitment, and personnel currently looking for career guidance or advancement in this area should contact:

Richard Milsum on 01-354 1055 or evenings/weekends on 01-958 2553 for an informal and confidential discussion.

MARCH COMPUTER RECRUITMENT
1 NOEL ROAD, LONDON N1 8HQ
01-354 1055

(4398)

"There are few projects in computing that can match the variety provided by Birmingham City Council

and we have the equipment to meet the challenge with an IBM 3033 and over 400 terminals"

Birmingham City Council, the largest city authority in England, serves a population of over 1 million with a diverse commercial and industrial community. The City Treasurer's Department has responsibility for over £700m expenditure p.a. on capital and revenue account and playing a vital role in the Department's activities is the purpose built Computer Centre. The Centre operates an IBM 3033 with 13,000 megabytes of backing store to support over 400 terminals with a further 200 planned. The next phase of the City's Development Plan is taking place which has created a number of opportunities for professional computer personnel to work on a wide selection of applications.

There are few developments in computing that can match the variety provided by the work of the Council from Education and Property to Planning and Social Services involving large data base systems and incorporating on-line processing facilities.

We require now:-

Information Centre

ANALYST PROGRAMMERS

£11,859 p.a. **(Ref. CD12)**

These posts lie within the Information Centre, a team advising and assisting users in a wide range of projects involving micros, minis, word processors and mainframe personal computing. The holders of these posts will be those having systems analysis experience plus a good knowledge in these areas. Knowledge of a large IBM mainframe, with which much of this equipment will require to communicate, will be considered advantageous.

Applications Development

SYSTEMS ANALYSTS

up to £11,859 p.a. **(Ref. CD7)**

To develop applications (financial and non financial) and work with the minimum of supervision.

It is unlikely that the persons appointed will have less than 3 years' systems experience.

CHIEF PROGRAMMER

up to £12,174 p.a. **(Ref. CD6)**

Applicants would be responsible for controlling a programming team working initially on the City's Direct Labour Organisation Systems. He/she must have a high level of technical expertise, proven qualities of leadership and the ability to utilise resources to their best advantage.

SENIOR PROGRAMMERS

up to £11,184 p.a. **(Ref. CD9)**

Applicants will require experience of specifying, designing, writing and testing COBOL programs in either a GEORGE 3 or OS/MVS environment. Experience in supervising others would be an advantage.

PROGRAMMERS

up to £9,231 p.a. **(Ref. CD10)**

Applicants should have experience of designing, writing and testing COBOL programs in either a GEORGE 3 or OS/MVS environment.

Technical Support Group Staff

JUNIOR SYSTEMS PROGRAMMERS

£5,352 - £9,231 p.a. **(Ref. CD11)**

Candidates should have significant IBM programming or operating experience. Suitable general training will be given before the successful candidate is assigned for specific training and experience under the supervision of a senior systems programmer in one of the following areas: Data Base, Operating System/Personal Computing, Communications Network, Service Support.

Good terms of employment include flexible working hours based on 36½ hour week, assistance with relocation in approved circumstances. Pay award pending.

For application form candidates should apply to:-

City Treasurer (Ref: PSO), Council House, Birmingham B3 3AB.
Telephone: 021-235 2993/2385.

Canvassing will disqualify.

An equal opportunity employer.

BIRMINGHAM CITY COUNCIL

IBM OPPORTUNITIES

ANALYST/PROGRAMMER To £10,000

WEST LONDON. Retail company in West London have recently purchased an IBM 4331, and are utilising CICS, ADABAS and NATURAL. They require 2 years + IBM COBOL, with some experience of CICS, and you will be working on pure CICS development for the next couple of years, with your time split between programming and analysis. Good discount on clothes, 4 weeks holidays and BUPA Scheme. **REF G/2383**

IBM ANALYST/ PROGRAMMERS To £12,000

CITY. This highly respected financial company located in the heart of the City, have requirements for experienced IBM COBOL Analyst/Programmers to work on an IBM 4341 mainframe with DOS/VSE, VSAM and CICS experience. With the wide range of development projects that are currently under way, and planned for the future they can offer excellent scope for career progression, with a unique opportunity to be involved with advanced systems. You will be well rewarded in terms of salary which will include a productivity bonus. **REF G/2387**

SYSTEMS ANALYST c£12,500

Exciting position for an analyst with these brand new IBM users. They are looking for 3/4 years sound commercial analysis, gained in an IBM environment, with the ability to take systems from design to implementation, liaise with users, get involved in CICS design work, and use your initiative and common sense to the full. **REF C/2368**

IBM COBOL £8,000

ESSEX. Stimulating and highly rewarding opportunity existing for a junior programmer who can offer 9 months + IBM COBOL experience either in a DOS or OS/MVS environment. Knowledge of CICS would be a distinct advantage but training in on-line and database techniques will be provided. You will be working within a small and closely knit department, where promotion is based on personal merit. This position offers real advancement for a young programmer who wants more career progression. **REF G/2066**

SENIOR PROGRAMMER IBM £10,000-£11,000

HERTS. Major manufacturing organisation in Hertfordshire are now in a position to recruit a senior programmer, to work in financial applications. The ideal candidate will have 5 years COBOL programming experience, and preferably CICS and VSAM. Supervisory experience would be a great advantage. This would be a good career move for someone who would like to become increasingly involved in management. Excellent benefits include staff restaurant, sport and social club, and staff discounts. **REF G/2587**

ANALYST/PROGRAMMERS To £13,500

HANTS. Three positions with established finance company, housing an IBM 4341, with MVS, CICS and DL/I. They are seeking 3 levels of people from 12 months + experience up to 5/6 years, and you should be able to offer IBM COBOL, preferably with some CICS or DL/I, and the ability to expand your analysis skills. The senior analyst/programmer will be expected to take a project leading role occasionally and liaise extensively with users. Plenty of development work, and excellent benefits including full relocation, profit sharing, cheap housing etc. **REF C/2482**

IBM ANALYST/PROGRAMMER £NEG

MIDDLESEX. Successful IBM 4341, VM/CMS, DOS/VSE site are currently seeking an Analyst/Programmer with 2-4 years IBM PL/I experience to assist in the development of a wide range of systems including order-entry, production-control, invoicing etc. To enable you to participate fully in these new development plans, you will receive full training in CICS, and plenty of in-house education to enable you to expand your technical skills. Excellent career prospects and a full company benefits package including travel allowance, pension scheme and a subsidised canteen. **REF D/2502**

RPG II/III

IBM SYSTEM 38 To £12,000

MIDDLESEX. Super position with a rapidly expanding finance and insurance company situated in their own new office block in North Middlesex. Your RPG III skills will be invaluable, in either a technical or applications role, and you will be well rewarded financially for your efforts. They would like to hear from programmers or analysts/programmers with 18 months-5 years experience of GSD and at least 6 months RPG III. **REF C/4302**

PROGRAMMER/ANALYST £10,000

CITY. Two years + IBM System 34/RPG II required for this interesting City position. You will be an integral part of a small team developing and supporting commodity broking and currency systems, and will hopefully progress into a business consultancy role within the firm. Excellent benefits including 2 salary reviews, BUPA, and Lunch Allowance. **REF C/2577**

IBM SYSTEM 38 £9,000-£14,000

CENTRAL LONDON. First class opportunities exist for IBM System 38 programmers and analyst/ programmers. This major software house provide project management and software support to small business system users, with clients based in Central London and the Home Counties. If you are looking for unlimited career prospects and enjoy working in a fast moving environment, then why not call me to discuss these positions in more detail. **REF G/2484**

IBM SYSTEM 34 £12,000

CITY. Reputable firm of management consultants are looking for an RPG II Analyst/Programmer. The ideal candidate will have financial systems experience within the GSD field and at least 2 years RPG II. You will be developing major systems from design to implementation. This is a rapidly expanding company who can offer an excellent career path to self-motivated individuals. **REF G/2589**

RPG III To £11,500

CITY. Financial company in the City of London, have recently upgraded to an IBM System 38, and seek a competent and ambitious programmer/analyst with 3 years + DP experience. You must be able to offer at least 6 months RPG III/System 38 knowledge, and be interested in developing a range of financial/investment systems. As part of a small team, you will hold a great deal of responsibility. **REF C/2578**

ANALYST/PROGRAMMERS c£11,000

HERTS. A major multi-national organisation wish to continue their expansion drive by the addition of a further analyst/programmer. You will be part of a small team, responsible for IBM System 34 development. This is an ideal opportunity to improve your analytical skills and progress in your career. The company offer BUPA pension scheme, 4 weeks hols and guaranteed bonus.

OTHERS

DEC BASIC/FORTRAN £NEG

If you can offer in excess of 12 months DEC PDP or VAX experience under any operating system and using either BASIC + (2) or FORTRAN my clients would like to meet you. Ambitious individuals will be able to progress quickly in this fast-expanding organisation. Applications range from finance to administration. You will have a great deal of user contact and will enjoy an excellent salary and package. **REF A/1010**

PROGRAMMER PLUS To £11,000

ESSEX. Fed up commuting! Do you have 1-5 years ICL COBOL expertise? You could be joining this expanding professional computer services company based in Essex. They seek ambitious individuals with the desire to increase their DP knowledge whilst developing a sound and worthwhile career , in a senior programmer capacity. Applications are mainly financial and they offer the chance to train on new machines, and to develop into analysis. An excellent salary and package is offered including flexi-time. **REF D/2425**

RETRAIN — ANY COBOL c£10,000

This major commercial organisation based on the London/Herts/Middlesex borders are expanding their U.K. division and seek programmers and seniors with a thorough knowledge of COBOL on any mainframe. They offer extensive training in UNIVAC 1100, database and relevant software. The systems are varied and range from financial to commercial. Career prospects are good and this is an excellent opportunity to develop your skills on an alternative machine. **REF A/1762**

HEWLETT PACKARD — COBOL c£9,000

Based in Surrey, this manufacturing concern seek a Junior Programmer/Analyst with a minimum of 6 months HP3000 COBOL experience, preferably having used IMAGE, VIEW and QUERY. You will be developing on-line order processing, personnel, and accounting systems. Prospects for promotion are excellent and promotion will come rapidly to the right applicant. Phone now for more details. **REF A/2384**

ICL COBOL To £9,000 + Mortgage

SURREY. Highly successful ICL 2900 site currently in the process of developing new systems are offering interesting work to experienced and enthusiastic DP professionals. In order to achieve this development, they are seeking ICL COBOL/VME programmers. 18 months + experience is required, and exposure to TPMS and IDMS would be desirable, although full training can be provided. In addition to a competitive salary, they provide a well defined career path, pension and life assurance schemes, plus a mortgage subsidy. A relocation package may be offered where appropriate. **REF D/2456**

HONEYWELL — COBOL £10,500

Excellent opportunity for Honeywell mainframe programmer/analysts to further their knowledge whilst developing an exciting and sound career. If you have 18 months + Honeywell L66/64 COBOL expertise, hopefully having utilised DM4 and TDS then I would like to hear from you. My client, a major Essex based concern is expanding its development team. There is plenty of scope for advancement. An excellent package and salary is offered. **REF A/1712**

ICL ME29 To £10,500

CITY. This is an excellent opportunity for a programmer to take up a key position within this well established insurance company. The company house 2x ICL ME29 running under TME. Applicants should have upwards of 18 months ICL COBOL experience, preferably utilising TPS. You will play an integral part in user training, coding, design and implementation of a range of insurance and business systems. This is a new position offering career prospects, in-house education, exciting development projects, and a pleasant and flexible working environment. Excellent package including subsidised lunches and 4 weeks holidays. **REF D/2452**

BURROUGHS — SENIOR c£13,000

This expanding professional organisation, based on the Middlesex/Surrey borders is seeking Senior analyst/programmers and analysts to become part of a team completing development work to an extremely high standard. You must have a minimum of 2 years relevant Burroughs mainframe experience coupled with the ambition to progress. Training is offered at all levels as is the opportunity to work on a variety of applications including: accounting, manufacturing and banking. An excellent package is offered. **REF A/1913**

DEC — BASIC/COBOL To £12,000

My clients based in the heart of the City are currently seeking an Analyst/Programmer with 2 years + DEC/PDP or VAX experience and one or more of the following: RT-11/TSX/VMS; and either COBOL and/or BASIC. They offer the chance for you to become an integral part of a team developing varied and interesting financial and insurance systems to a very high standard. Promotion prospects are excellent. The company offer a salary that will more than commensurate with experience and standard large company benefits. **REF D/2508**

COBOL — RETRAIN To £10,500

MIDDLESEX. Superb opportunity for an ICL COBOL programmer to retrain on the latest and most advanced Honeywell equipment, and increase their on-line and analysis skills. A minimum of 12 months relevant experience is required with one or more of the following, 1900 COBOL, FILETAB, GEORGE II, DME or MTS. An excellent career path is envisaged. Call now for further details about this exciting position. **REF D/2276**

DEC — RETRAIN TO IBM! £NEG

Exciting opportunity for a DEC/PDP BASIC + 2 programmer to begin retraining almost immediately on a new IBM 4331 using CICS. You will be required to complete some maintenance on the DEC, whilst developing projects on the IBM. Applications include Order Processing, Management Information, and Ledgers. London-based, my clients offer a good career path, excellent salary and extensive training. **REF A/2389**

THE INTELLIGENT CHOICE

Brushfield House, 12 Brushfield Street, Bishopsgate, London E1 6AN
Telephone: 01-247 3356 (24 Hours)

ENGLEDOWN

COMPUTER PERSONNEL CONSULTANTS

Dan Lampert

COMPUTER STAFF SAUDI ARABIA PREFERABLY BILINGUAL ARABIC/ENGLISH

My client is seeking qualified computer staff to work within the PETROMIN organisation, which is concerned with exploration, production and refining of oil.

There are two vacancies

Computer Analyst — Dhahran

The computer analyst will identify the needs of the Supply Co-ordination Secretariat and recommend the acquisition of the appropriate equipment. He will generate data files and output formats and train staff to update data, produce statistical reports and maintain analytical computer models as required. Reference 8312.

Computer Manpower Planning Analyst — Riyadh

This analyst will prepare software to assemble data for manpower records within the PETROMIN organisation. He will also be involved in the analysis of requirements for training and upgrading of operational staff, including the training of staff in the use of computers. Reference 8315.

Computers currently in use are Apple II models

The above positions are open to graduates in computer science, who have a few years' experience. The minimum salary being offered is:

$40,000 (U.S.) p.a. tax free

with free single or married accommodation, free utilities, U.K. schooling allowances if on married status, good leave, medical care and other company benefits.

Write immediately, in complete confidence, stating the reference numbers, to:
Dan Lampert BSc(Eng) FICE, FIMech E,
Personnel Consultant, Double L Consultants Ltd,
Suite 1, Harcourt House, 19a Cavendish Square,
London W1M 9AD
Telephone: 01-629 2743 (4408)

HP 3000

CENTRAL LONDON **SALARY: HIGHLY COMPETITIVE**

Ideal career move into senior position for ANALYST/PROGRAMMER with 2+ years Image, View, Cobol. To set-up new installation initially with real prospects of secondment to International team to install system in other countries.

Please forward cv or write for job specification and application form to:

AFRAY INTERNATIONAL, Ullenwood House, Manor Close, East Horsley, Surrey KT24 6BA (04868 4579 — 24 Hours)

(4414)

Anglian Water

COMPUTER APPLICATIONS OFFICER

Post Reference: TL020 **Salary NJC Grade 7 £9,468-£10,590**

Applications are invited for the above post, based at our offices situated at Whitwell, between Oakham and Stamford. Applicants should be Software Applications Engineers, able to advise on the commission of a major telemetry system, and on a wide range of microcomputer applications including program development. Duties will include some travelling within the Division for which appropriate car expenses will be paid.
The office is situated by Rutland Water, a famous beauty spot with leisure amenities of sailing, fishing, etc. Housing is plentiful and reasonably priced.
Conditions of service are in accordance with the National Joint Council for Water Service Staff, and relocation expenses will be paid in appropriate cases.
Application forms, to be returned not later than July 18th, 1983 are obtainable from the Personnel Officer, at the address below.

OUNDLE DIVISION
North Street, Oundle, Nr. Peterborough PE8 4AS
Telephone: Oundle (0832) 73701 (4367)

PERMANENT VACANCIES

SENIOR SYSTEMS CONSULTANTS
IBM Management ability needed Uxbridge. £15.5K + Car

PROGRAMMING TEAM LEADER
IBM DB & DC experience. Herts to £16.8K.

SYSTEMS DESIGNER
IBM experience with MS/MVS or 8100 DTMS. Herts to £16.6K.

SYSTEMS DEVELOPMENT MANAGER
W.C.2 £16K + Car

ANALYST PROGRAMMERS
Software house, W.C.2. IBM System 38 RPG II to £18K

ANALYST PROJECT LEADERS
Large IBM development project Ipswich + £16K

CONTRACTS AVAILABLE
For details contact us on 0763 47161 (24 hours)

PENTAGRAM, 1a KILN HOUSE YARD BALDOCK STREET, ROYSTON, HERTS.

(4369)

Real-time Defence Systems

The best of both worlds

c.£16,000-£21,000

Overseas assignments have much to offer: High salaries, allowances, and the opportunity for you and your family to see more of the world. There's one big BUT: The uncertainty of job prospects when you return to the UK.

Software Sciences have the perfect solution. Our position as a leading international systems and software house is generating an ever-increasing number of major projects in the UK and overseas. We're planning continuous and substantial growth over the next few years. And that means we can offer our professional staff — wherever they work — excellent long term prospects of career development in a stable but dynamic environment.

We're currently seeking experts in Real-Time embedded defence systems to spend 2-3 years on "state-of-the-art" projects in Benelux. Thereafter, you'll have the choice of either returning to the UK company with enhanced experience and status, or extending your stay in Europe, or, perhaps, of working elsewhere in the world.

SOFTWARE PROJECT LEADERS
SENIOR DESIGNERS

The varied range of projects and sub projects involved demands applications experience in one of the following:

SENSORS · DATA HANDLING · FIRE CONTROL

In all cases, experience of high level design techniques (e.g. MASCOT or SADT) is essential and knowledge of RTL2/Assembler languages within a VAX and VMS environment would be useful.

Project Leaders will have at least 8 years relevant experience including project management, planning, progress, and software quality assurance.

Senior Designers will have at least 5 years' experience in the design and/or implementation of embedded systems.

Remuneration packages will be negotiable in line with your experience and will include a full range of overseas allowances. Relocation costs will be met by the company, as will the cost of twice-yearly home visits for you and your family.

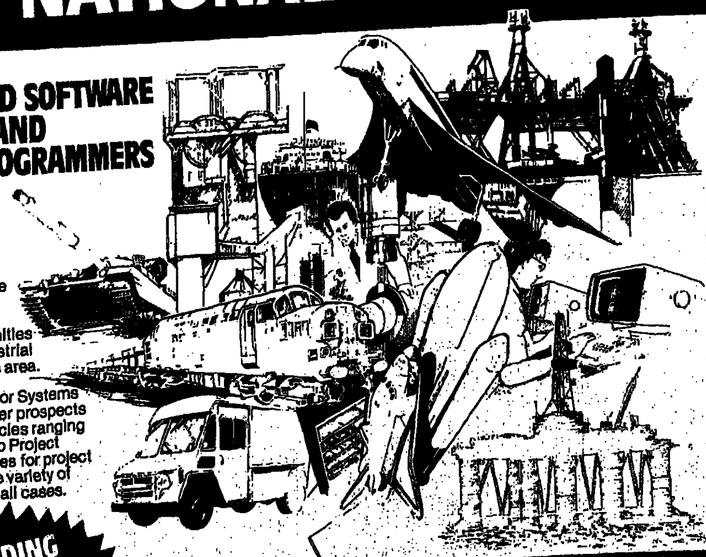
An information pack about the jobs, the benefits and the location is available, together with an application form from: Sharon McKeever, Software Sciences Limited, Abbey House, 282/292 Farnborough Road, Farnborough, Hampshire GU14 7NB. Tel: 0252 544321.

SOFTWARE SCIENCES LIMITED

NATIONAL PARK ENVIRONMENT

to £12,000

SYSTEMS AND SOFTWARE ENGINEERS AND ANALYST/PROGRAMMERS



Located in the delightfully situated market town of Guisborough in the Cleveland Hills, close to the Coast, Yorkshire Moors and the Dales, these posts offer outstanding opportunities in the Real-Time industrial and defence systems area.

Working within a major Systems Services Group, career prospects are good, with vacancies ranging from Programmers to Project Leaders. Opportunities for project experience on a wide variety of applications exist in all cases.

MINIS and MICROS

Applicants should have real-time applications experience and in-depth knowledge of one or more of the following:-

- ASSEMBLER and/or high level on micros.
- DEC PDP 11 based systems.
- RSX or similar operating systems.
- CORAL, RTL2, PASCAL.
- Def. Stan. 0521 or similar.
- Multiprocessor communications.
- Hardware design and packaging on 8 or 16 bit micros.

Candidates with experience or potential to develop systems from inception to completion are sought, and rapid career progression can be expected.

OUTSTANDING OPPORTUNITIES IN REAL-TIME SYSTEMS

LORIEN COMPUTER SERVICES

Lorien Computer Services
Recruitment Consultants
OCS House, Servia Road
Leeds LS7 1NJ.
Tel Leeds (0532) 455911 24 hour telephone service

Contact Steve Sykes or John Mason on Leeds (0532) 455911 during office hours, or Steve Sykes on (090484) 350 evenings and weekends, or write to this address, quoting REFERENCE CW.

GST Computer Systems

GST is a professional systems company with its HQ in Cambridge. The company is structured into software services, hardware distribution and R and D, and has specialised in systems software and the technical application of computers.

In addition to a basic salary, the company has a very generous benefits package, that includes BUPA, Personal Health and Accident Insurance, Life Insurance, Pension Scheme, Profit Sharing, Project Bonus Schemes and a car.

Current vacancies include:

VIDEO GAMES PROGRAMMERS — Cambridge-based

Salary to £11,000 plus car, benefits and bonus

Experienced microprocessor software persons with a keen interest in developing video games, are required to work on the development of original games for a variety of micro hardware systems. A solid Assembler background is essential as is the ability to be creative.

SUPPORT CONSULTANTS (Commercial Systems) — London/Cambridge

Salary to £12,000 plus car and benefits

A solid EDP background which includes micro experience is essential for these positions which have excellent promotional prospects. Experience of CPM, COBOL and/or DBASE 11 would be an advantage. The job involves both short and long term support (often on-site) working for clients who purchase integrated systems comprising both hardware and software.

FORTRAN PROGRAMMERS (CAD/CAM) — Cambridge-based

Salary £7,000-£9,000 plus car and benefits

A minimum of two years' good Fortran could provide you with the opportunity to gain experience of CAD/CAM based systems. The work will include development of major CAD packages and products. PRIME or VAX experience would be a distinct advantage but is not essential.

For further information please contact Jenny Dalrymple-Hay or Ian Murray-West on 01-493 2947, 8am to 10pm, Monday to Friday, or weekends, Jenny Dalrymple-Hay on Beaconsfield (04946) 4579, quoting Ref. 9984.

DALROTH & PARTNERS LTD., 4 HALF MOON STREET, LONDON W1. Tel. 01-493 2947 (4391)

Teach Computer Programming

at Preston Prison

We're looking for an experienced person to teach, as a Civilian Instructional Officer, the practice and theory of Computer Programming to prison inmates.

Much your own boss After an intensive course on teaching techniques, you'll be given responsibility for implementing a training syllabus. Trainees are prepared for the City & Guilds Certificate 747, 748 and other appropriate equivalent examinations.

Secure A steady job and a regular pay packet.

Good working conditions Every effort is made to build an atmosphere which is as similar as possible to any other office environment, although at certain establishments security may demand the presence of a prison officer.

Satisfying to know you're responsible for giving your trainees a basic skill and helping them, perhaps, to find a more useful way of life.

To apply, you should have a wide experience in the field of commercial computer programming, in COBOL or BASIC, a knowledge of FORTRAN would be an added advantage, candidates should also have a knowledge of information systems. You should have received recognised training in the profession, followed by 5 years commercial experience. Possession of a recognised qualification would be an added advantage.

Pay starts at £7,130 rising to £8,489 (including Environmental allowance). 5 day week, generous holidays.

For further information and an application form, please write to: The Home Office (R2/7/83), FREEPOST, London SW1V 1YZ (no stamp required). Applications are invited from men and women.

The closing date for applications is 14.7.83.

H.M. Prison Service
A Service for Society

THE UNIVERSITY OF LANCASTER
Department of Computer Studies
LECTURER/SENIOR LECTURER

Applications are invited for the post of LECTURER/SENIOR LECTURER in the Department of Computer Studies. Applicants should have research and teaching experience in the development of microprocessor system design, microprocessor software or distributed computer systems. Appointment will be made on the Lecturer or Senior Lecturer scale according to qualifications and experience. Lecturer scale – £7,180-£14,125, Senior Lecturer scale – £13,616-£18,826.

Further particulars may be obtained (quoting reference L.2858) from the Establishment Office (Recruitment), University House, Bailrigg, Lancaster, LA1 4YW, where applications (five copies), naming three referees, should be sent NOT LATER THAN 22 JULY 1983. (4397)

Coleg Prifysgol Gogledd Cymru, Bangor
University College of North Wales Bangor

Applications are invited for the post of

ADVISORY/ APPLICATIONS PROGRAMMER

in the COMPUTING LABORATORY, tenable for three years from September 1st, 1983.

Applicants should be graduates in Mathematics, Computer Science or one of the Physical Sciences, and preferably have a programming background and experience in advisory work.

The salary will be on the Other Related Academic Staff Scale 1B (£8,316-£9,876 per annum) or 1A (£7,180-£11,016 per annum).

Further particulars of this post may be obtained from the Personnel Officer, and applications (two copies), giving details of age, qualifications and experience, together with the names and addresses of three referees should be sent to the Personnel Officer, University College of North Wales, Bangor, Gwynedd LL57 2DG, by not later than 15th July, 1983.

Applications will be acknowledged if accompanied by a s.a.e. (4347)

Yorkshire Regional Health Authority
COMPUTER CENTRE

COMMUNICATIONS SPECIALIST

Technical Analyst Programmer
Scale 9 £8,367 to £10,277 + Proficiency Allowances of up to £554 according to exp.

The Authority is taking delivery of an ICL 2986 mainframe computer at this time and it is intended to develop a communications network throughout the Region. The latest ICL products are being introduced both centrally and at the remote sites and we need an experienced person to assist in planning, installation and day-to-day support of the network. The services to be maintained include MOP, MAC, RJE and TP using facilities available with George 3 PME and the VME 2900 Operating System.

A knowledge of ICL communications software would be an advantage though applicants with experience of other manufacturers' products will be considered.

New entrants to the NHS will start at the minimum salary point progressing by annual increments through the scale.

Application forms can be obtained from the Regional Personnel Officer, Yorkshire Regional Health Authority, Park Parade, Harrogate HG1 5AH. Tel: (0423) 86061 Ext 108/109.

Please quote Ref No. ACS.

Closing date: 15 July, 1983. (4435)

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SPECIALISED RECRUITMENT CONSULTANCY

The NEW Data Processing Recruitment Consultancy with the Rare Professional Approach and backed by years of experience – HAS NOW ARRIVED!!

WITH VACANCIES THROUGHOUT THE U.K.

Salesmanagers, Salesmen, Sales Support, Programmers (Commercial and Real-time), Analysts, Analyst/Programmers, Project Leaders, Software Engineers and Systems Managers

For a first-class professional and confidential career assessment contact IRENE ROGERS or DENNIS PADGET on 0423-55451 NOW or alternatively write to the address below

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Suite 3, 113 Hayura Crescent, East Parade, Harrogate HG1 5BQ (4366)

METROPOLITAN BOROUGH OF **Rochdale** An Equal Opportunity Employer

TREASURER'S DEPARTMENT

7587
TECHNICAL SUPPORT PROGRAMMER
£9,666-£10,071 801/802

7589
PROGRAMMER
£5,382-£9,231 (Career AP2/SO1 with a bar at the maximum of each grade. Starting salary dependent upon experience)

7585
COMPUTER OPERATOR
£5,208-£5,871 (inclusive of 12½% shift allowance. Scale 2/AP2 with a bar at the maximum of Scale 2)

Applications are invited for the above posts. The Authority operates a 2988 mainframe, running under VME 2900 and supporting a large variety of work.

There is a lively development programme planned which will substantially increase the 90 terminals currently in use.

Experience staff are required but consideration will be given to training in VME 2900 if necessary.

Application forms available (quote Ref No) from the Chief Personnel Officer, PO Box 69, Municipal Offices, Smith Street, Rochdale OL16 1XQ. Tel: 47474 Ext 662. To be received not later than Friday, 15th July, 1983. (4372)

MODUS

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19 West Street, Dunstable, Beds. LU6 1SL
Telephone: Dunstable (0582) 608002

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DISTRIBUTED DATABASES ? RESILIENT SYSTEMS

COMMUNICATIONS SOFTWARE

Berks/Bucks border to £12,000

PERKIN-ELMER DATA SYSTEMS is one of the U.S.A.'s most successful mini-computer manufacturers, who believe in utilising the very best software design expertise in the world, right here in the U.K. These powerful 32-bit machines and the impressive range of software products are aimed firmly at the commercial and business marketplace – a tough and competitive arena demanding user-friendly, versatile, well designed fail-safe products. The current design work on Data Management Software, Transaction Processing Software and a new 'Resilient System' fully meets these criteria.

The company now seek Senior Technician/Designers to join existing project teams. Experience should encompass a systems programming background using an Assembler language and any exposure to either database operating systems or communications software would be a distinct advantage. The project teams are fairly small and dedicated, thus every team member is able to make a major contribution to the design of the product. Consequently, responsibility is readily given and achievement more easily seen, appreciated and rewarded.

If you are looking for a challenging career move, contact BOB REASON at office on 0582-608002 or evening/weekend on 0908-564949.

CW77

Modus Consultants are in London every Tuesday & Thursday – come and meet us

Software Engineers

Burroughs Industry Systems Group provides complete business solutions for specific industries. Within this Group the Croydon facility designs and builds micro-processor based systems for data collection, transmission and processing primarily in banking services.

The continued development of data communications, network interfaces, automated teller control, development tools and software quality assurance provides opportunities for Software Engineers with at least 2 years' experience in one or more of the following:-

- transaction processing
- compiler design
- data comm at BIT and BYTE level
- peripheral device control and error recovery
- software quality assurance

Some international travel is expected, primarily to the United States. Career prospects within the company are excellent with provisions for transfer in the above subject areas being part of our development plan.

For further details, telephone Jim Smith, Software Manager, or write with full c.v. and for information on salaries, benefits and the relocation package to:-

Mr. S.R. Pheasant,
Personnel Manager,
Burroughs Machines Limited,
112 Purley Way,
Croydon,
Surrey.
Tel: 01-686 0355.

Burroughs

FTB

Accounting Package Development

Project Leader

Hampshire **To £15,000 + Benefits**

Our client, a subsidiary of a substantial international group is a fast-growing systems house providing a comprehensive range of products and services to clients operating in the European manufacturing and distribution sector.

To complement existing products a replacement range of accounting packages is scheduled for development. To lead the team engaged in this task we require a computer professional with a strong accounting background preferably with package development experience. The packages will be designed to operate on Digital Equipment VAX hardware and will use COBOL as the main programming language.

Career prospects are excellent and rewards are geared directly to personal performance and committment.

Salaries and benefits are aimed at recruiting and retaining high quality staff. Relocation expenses will be paid where appropriate.

Please contact Brian Postles or Sue Ashby.

Ferguson Thorley Bowles Associates Limited
International Personnel Consultants
15 Clarence Street, Staines, Middlesex TW18 4SU
Telephone: Staines (0784) 59247. Telex: 8814148

your appointments register

Programmers

NCR/IBM/COBOL to £15K
Insurance Banking London · H Counties · N. Eng.

COBOL/PL1/OS/CICS/IMS to £13K
Commercial H. Counties · Midlands · Manchester

ICL/ON-LINE EXP to £12K
COBOL Surrey

HONEYWELL to £12K
Systems Programming experience Middlesex/London

DATA GENERAL ECLIPSE to £11K
Cobol Leicestershire

IBM/RPG2 to £12K
Financial/Insurance Home Counties

IBM to £16K
System exp. Essex

BASIC to £11K
Mini Computers London

IBM/UNIVAC/COBOL to £12K
On-line/Database Surrey

NCR 8200 to £14K
Financial SW LONDON

Analyst/Progs

PRIME CAD/CAM to £11K
E. Anglia

IBM 34/38/4341 to £15K
London/Home Counties/North

ICL 1500/ME29/2903 to £12½K
COBOL Essex/Herts

PRIME/COBOL to £11K
Accounting/Commercial Middlesex

Hardware/Support

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IBM SYSTEMS/SUPPORT to £15K
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(4431)

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Salary up to £9,231

Applications are invited from science or technology graduates to fill a newly-created role spanning, in the first instance, the Electrical and Mechanical Engineering disciplines. The successful applicant will work in close co-operation with staff and students of both departments in an advisory role, but will also become deeply involved in both hardware and software developments. The ability to programme in microprocessor assembly language as well as higher level languages is essential, and experience of interfacing both analogue and digital equipment to microcomputer systems would be an advantage.

The post will be one in which a young graduate can acquire a valuable range of experience.

Further details and application forms from the Deputy Head of Personnel, Brighton Polytechnic, Moulsecoomb, Brighton BN2 4AT. Tel: Brighton 693655. Closing date 28 July, 1983.

(4364)

University of Leeds
Department of Linguistics and Phonetics

Applications are invited for the post of

ELECTRONICS TECHNICIAN
(Scale 3)

The person appointed will work under the direction of the Department's Chief Technician on many aspects of speech signal processing. The Department has a leading position in the existing field of human-machine communication. A strong interest in computing (preferably machine code as well as high-level languages) and in hardware-software interfacing will be required.

The post offers the opportunity of participating in the development of computer logging of laboratory data, computer control of artificial vocal tract analogue models of digitised signals for the automatic machine recognition of speech, digital purpose electronic circuitry is designed, constructed and maintained in the Department's workshop. Standard audio recording apparatus is used also for teaching and research. Qualifications required are ONC or equivalent and three years' relevant experience. The salary is on the scale £5,151 to £6,036 p.a. The appointment will start from October 1st, 1983.

Applications in writing to the Head of Department of Linguistics and Phonetics, University of Leeds, Leeds LS2 9JT. Closing date for applications: July 8th, 1983.

(4403)

UNIVERSITY OF LIVERPOOL
COMPUTER LABORATORY

DEPUTY DIRECTOR

Applications are sought for the above post. The person appointed will be responsible for the day-to-day running of the computing service and assisting the Director in the planning and development of computing services for the University; particularly the academic services. The successful candidate will be expected to deputise for the Director when necessary and so a wide knowledge of, and involvement in, all aspects of University computing services will be necessary. Candidates should be graduates with considerable experience in computing and computing service provision; particularly University services. A relevant post-graduate qualification would be an advantage, but above all, proven ability to organise and supervise the work of other staff is essential for this post. Initial salary will be within the range £13,815-£14,485 per annum on a scale rising to £16,925 per annum with the possibility of subsequent promotion.

Applications, including the names of three referees, should be sent by the 15th July, 1983, to The Registrar, The University, P.O. Box 147, Liverpool L69 3BX, from whom further particulars can be obtained. Quote Ref: RV/984.

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Informal interviews will be held at the SHEPPERTON MOAT HOUSE HOTEL Felix Lane, Shepperton Wednesday 6th July 4.30 p.m.-8.30 p.m.

If you are unable to attend please telephone or write to: **Derek Carberry, MBIM, MIIM, MECI, Carlton Personnel Services, 25a Hermitage Road, Hitchin, Herts. Telephone (0462) 58518 or (04626) 3097 evenings/weekends**

Carlton PERSONNEL SERVICES

(4422)

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In addition to a first class salary, conditions of employment are excellent and relocation assistance will be given, if appropriate.

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ICI

Applications in writing, including a detailed c.v. and quoting reference No. ICP 795, should be addressed to: Mr. V.A. Mole, Personnel Officer, Imperial Chemical Industries PLC, Pharmaceuticals Division, Mereside, Alderley Park, Macclesfield, Cheshire SK10 4TG.

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Ideally 25-35 you should hold a degree in Computer Science or have 5 years' relevant experience. At least 3 years in programming is vital and you'll currently be working as an Analyst/Programmer in commercial applications – hopefully in a software house.

If you'd like to join a young company operating in a dynamic market, apply (initially in writing) to Ken Davies at Counting House Computer Systems Limited, Fornham House, Fornham St. Martin, Bury St. Edmunds, Suffolk IP31 1SR.

Counting House

(4389)

The Council's computer installation is based on two ICL 2988 computers supporting a County-wide network including five ME29s and over 150 terminals. The Council is committed to both the implementation of VME and an ambitious development programme. To support these projects a number of additional posts have been created and, initially, the following appointments will be made:

Systems Analyst
£8,858-£10,071 p.a.
(pay award pending)
Applicants must be able to demonstrate a sound background in analysis and design.

Analyst/Programmer
£7,791-£10,071 p.a.
(pay award pending)
A minimum of four years' relevant experience is required. Knowledge of TPMS and Data Dictionary would be an advantage.

Junior Programmer
£2,583-£8,325 p.a.
(pay award pending)
Applicants should have up to one year's experience of COBOL/RANGE COBOL.

For further information on these posts, ring Ian Pearce, Truro (0872) 71796.

Programmer
£2,583-£8,325 p.a.
(pay award pending)
To join a small team of Highways Engineers to assist in mainframe development, including conversion to VME. Applicants should preferably have an appropriate University qualification and be competent in COBOL and FORTRAN. For further information, ring Mike Aspden, Truro (0872) 74282, Ext. 137.

Systems Programmer
£7,791-£10,071 p.a.
(pay award pending)
Starting salary dependent on experience. For further information, ring Roy Caseway, Truro (0872) 74282, Ext. 282.
Experience of a VME environment is preferred.

Application forms are available from: The County Treasurer, County Hall, Truro, Cornwall TR1 3BD. Closing date, 15th July, 1983. Please quote reference No. 120, when replying.

(4285)

Cornwall

BOX NUMBERS
Box number replies should be addressed to:

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Sutton, Surrey SM2 5AS

IBM 4300
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(4387)

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The Job
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The Person
– At least 'A' Level, preferably Honours degree in a Mathematical/Scientific discipline.
– Several years programming, design and analysis in a Scientific/Real Time mainframe environment is essential.
– Use of structured design methodologies is desirable.

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If this post interests you please ring Alan Southgate [Chief Systems Analyst] on 01-831 6272 extension 4145 or write giving full details of age, experience etc to the Senior Personnel Officer, British Gas, 59 Bryanston Street, London W1A 2AZ quoting reference PS/ 616901/705/CW.

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To enable Computer Operations to meet the growth in workload and provide an efficient service for over 150 terminals situated in 14 remote offices we now require experienced Operations and Data Control staff, from junior to senior levels, to join a lively and hardworking team.

Applicants should preferably have Univac 1100 experience but more importantly should be able to demonstrate initiative, a good work record and the ability to acquire new skills. Telecommunications experience would be advantageous.

Operations presently work a two-shift, five-day system with the opportunity for some overtime. The Dominion is a progressive company offering competitive salaries and other benefits normally associated with a financial institution.

For further information and an application form please contact our Consultant Marilyn Davidson on 01-836 6775 or write to her at the address below.

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(4336)

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For informal discussion please contact Mr Broome, Ext. 256 and for further details and application form contact Susan Phillips, The Civic Centre, High Street, Kingswood, Bristol BS15 2TR. Telephone (0272) 601121, Ext. 212, quoting post reference CFO/53.

Closing date: July 12th, 1983.

Kingswood District Council is an equal opportunity employer.

(4383)

Senior Programmer

Salary £7,974-£8,508 inclusive (AP5) plus July Salary Award

Applicants should have a minimum of two years' programming experience in COBOL and should ideally have I.D.M.S. and/or VME experience.

This post offers the opportunity to participate in the development of a property database using both batch and online techniques. The postholder will also be expected to give consultancy to users and to undertake projects without supervision.

Programmer

Salary £7,056-£7,728 inclusive (AP4) plus July Salary Award

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For both posts where applicable training will be given.

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Closing date Friday, 15th July, 1983.

WELWYN HATFIELD DISTRICT COUNCIL

(4413)

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(4388)

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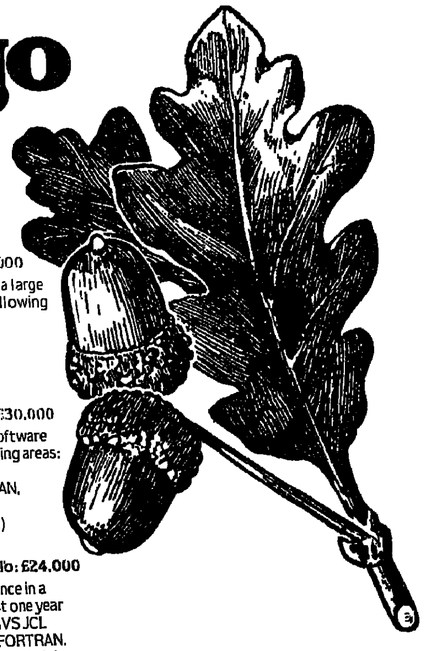

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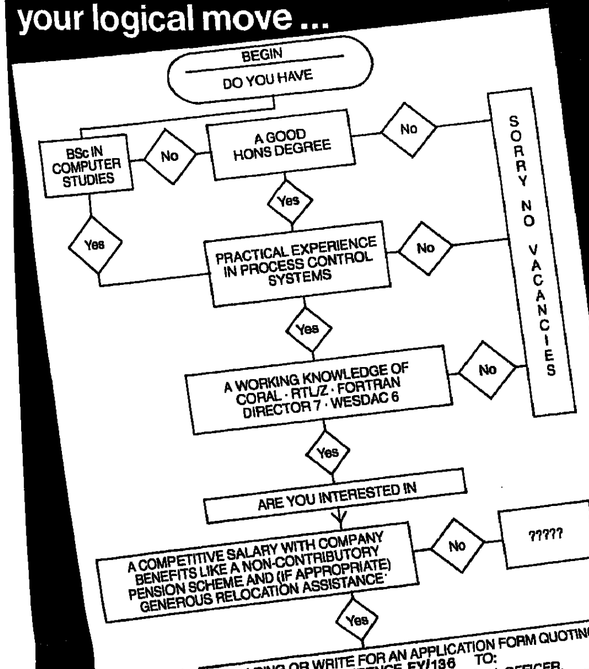

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ata COMPUTER RECRUITMENT

(2731)

SCIENTIFIC AND RESEARCH STAFF

John Charlton discovers that experienced staff with science backgrounds are a very attractive commodity

Skilled staff wanted in scientific circles

GOVERNMENT funding is probably the single most important factor influencing the provision of jobs for computer staff in scientific and research posts.

Back in November 1982, Information Technology Minister Kenneth Baker pointed out that spending on new technology under the Tories had rocketed from £50 million to £200 million per annum. However, there is plenty of evidence that many academic computer posts are automatically frozen when situations fall vacant.

This phenomenon is underlined by Alan Grant, director of the Bristol University computer centre: "If we wish to recruit anyone we have to make a very strong case for a new appointment.

"I also have responsibility for recruitment of computer staff at the Bath University installation, and things are much the same there."

Although some academic sites are suffering, there are those who are seeking computer staff with a scientific background.

Elizabeth Barraclough is the data processing manager of the Newcastle University computing laboratory, which is a very large site employing over 100 computer staff.

According to Barraclough: "The staff situation here is very static except on the research side, where we do have some difficulty in filling posts.

"These are jobs on specific research projects which are funded by the government. For example, one of these projects is researching into reliable distributed computing systems.

"For these sorts of posts we like to get graduates, especially those who have also completed their doctorates. These days we expect such people to have a computer science or an electronic science degree."

Imperial College London enjoys a prime position in Kensington, behind the soaring Victorian splendour of the Albert Hall. Here the demand is for programmers with Fortran, as well as knowledge of Assembler code.

Peter Whitehead is systems manager at Imperial College's computer centre. Over 100 staff

> "For specific research projects we like to get graduates"

are employed here, and the centre runs a number of CDC Cybers, as well as two Data General Novas and a Modcomp II.

Whitehead says: "We have jobs for analyst/programmers – at this installation we do not differentiate between programmers and analysts.

"We have three vacancies and applicants must know Fortran, Assembler and Pascal.

"Applicants should have a degree in a science subject and one year's computing experience. The minimum salary for these posts is £7,000.

"Our analyst/programmers lead a very varied life. We expect them to keep our machines going and keep up to date with the manufacturers' systems, as well as helping the students."

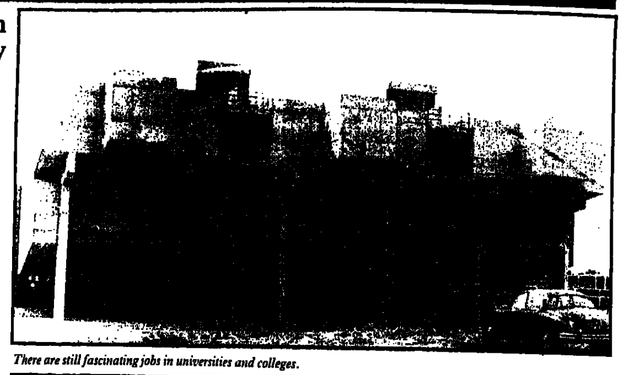
The government-funded Science and Engineering Research Council (SERC) has extensive research facilities in Oxfordshire. It has a large installation and employs a wide range of computers, including a CTL Sat, two Prime 400 Novas and a number of IBM mainframes and GEC 2050s.

Currently SERC is seeking staff to work on networking research projects. Data processing manager Doug House says: "We have seven vacancies for staff to work on our joint networking projects. For the senior post, that of network executive, we need a person who knows all about X25 networks and protocols.

"Salaries for these posts range from £6,000 at the junior level to £15,000 for the executive."

The job picture for computer staff in science and research installations has clearly been coloured, in a rather grey shade, by the financial straitjacket which has been imposed by the government on universities and colleges. But there are still many fascinating jobs around, particularly for experienced staff.

Salaries in the public sector may not be all that high, but the knowledge gained in these "leading edge" jobs makes scientific computer staff with a few years' experience behind them a very attractive commodity indeed.



There are still fascinating jobs in universities and colleges.

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The position carries an excellent range of benefits which include an attractive starting salary, negotiable in the region of £13,000, a comprehensive relocation package, contributory pension and free life assurance schemes, 25 days annual holiday and free family BUPA cover.

Suitably qualified candidates should forward a detailed CV to **Ian Payne**, Supervising Consultant at the SCR Birmingham office as soon as possible.

Interviews will be carried out at SCR regional offices during early July.

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Department of Computer Science

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Theoretical aspects of Computer Science; systems theory and software engineering; programming languages; language structure and computers; processor architecture and technology; intelligent knowledge based systems; numerical methods and applications.

Interest and ability to teach programming languages would be an asset. In the case of an exceptionally well qualified candidate, it may be possible to make an appointment at Senior Lecturer level.

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There are also two vacancies for research assistantships on grant-funded projects in computer networks and office automation. A first degree is required, and experience with UNIX and C would be desirable, and graphics or data communications experience would be an asset.

Salary scale: Lecturer or Research Assistant – £7,190-£14,125 per annum plus £1,186 LA per annum.

Further particulars are available from: Assistant Secretary (Personnel), University College London, Gower Street, London WC1E 6BT

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Further information may be obtained either from Mr J Hennings, SA Universities Office, Chichester House, 278 High Holborn, London, WC1V 7HE, or from the Registrar (Attention: Appointments Office), University of Cape Town, Rondebosch 7700, South Africa, by whom applications (quoting ref. no. CP/982) must be received not later than 31 August 1983.

The University's policy is not to discriminate on the grounds of sex, race or religion. Further information on the implementation of this policy is obtainable on request.

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An intense pulsed neutron source is under construction at the Rutherford Appleton Laboratory and is expected to be operational with an initial set of neutron scattering instruments by 1984/85. This is an exciting development which will provide a neutron source of world significance to further University research in the fields of physics, chemistry, biology and materials science.

The Laboratory wishes to recruit a computer programmer/systems programmer to help with the design and implementation of the computer systems which form an important feature of the overall scheme for experiment control, data acquisition and assessment. Some twenty five small and medium sized processors will be involved and an initial purchase of VAX 11/730 and VAX 11/750 computers has been made, together with a prototype Cambridge Ring local area network.

The successful candidate will join a small team and have the opportunity to take considerable responsibility for a major part of the programme.

Applications are invited from those with a good degree or equivalent qualification in a relevant subject.

Experience with DEC equipment and real-time systems would be an advantage but is not a requirement.

The post will be in one of the following grades, depending on your qualifications and relevant experience:

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Application forms from: Recruitment Office, RAL, Science and Engineering Research Council, Chilton, Didcot, Oxon OX11 0QX. Tel: Abingdon (0235) 445435 quoting ref no. VN 162.

Closing date for applications: 21st July 1983

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Two appointments for programmers to join a DES financed project involving Netherhall Software and Cambridge University Press in the production of educational software.

The appointments will be initially to April 1st, 1984 at the appropriate point on the LEA Salary Scales 2 and 2T (£4,800-£6,100).

The applicants should have a good working knowledge of programming with microcomputers and an interest in graphic display. Previous experience with BBC BASIC and/or 6502 Assembler Code would be useful though not essential.

Further details from: The Bursar, The Netherhall School, Queen Edith's Way, Cambridge CB1 4NN. Telephone: (0223) 242831. (4276)

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For further information please contact Jenny Dalrymple-Hay or Ian Murray-West on 01-493 2947, 9am to 10pm, Monday to Friday, or weekends, Jenny Dalrymple-Hay on Beaconsfield (04946) 4578, quoting reference number 9986.

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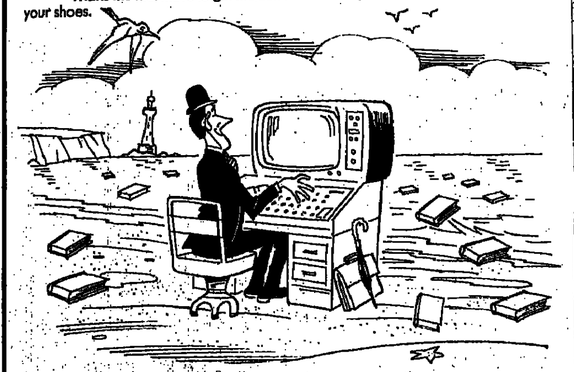

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POLICE COMPUTING

Greater Manchester Police is one of the largest Forces in the country with a comprehensive programme of computerisation.

The Force is currently installing a major computer system based on Tandem hardware incorporating criminal records, message switching and an associated data network linking Headquarters to divisions and sub-divisions.

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The post, although in the County Treasurer's establishement, is within the Force computer project branch which is currently based in Prestwich, Manchester but is shortly to move to Force Headquarters in Trafford, Manchester.

For an informal discussion phone Chief Superintendent Rankin, Projects Manager, of 061-798 9857, extension 300.

Application form, job description and further details from the County Treasurer, Greater Manchester Council, County Hall, Piccadilly Gardens, Manchester M60 3HP. Closing date July 11th, 1983. (4314)

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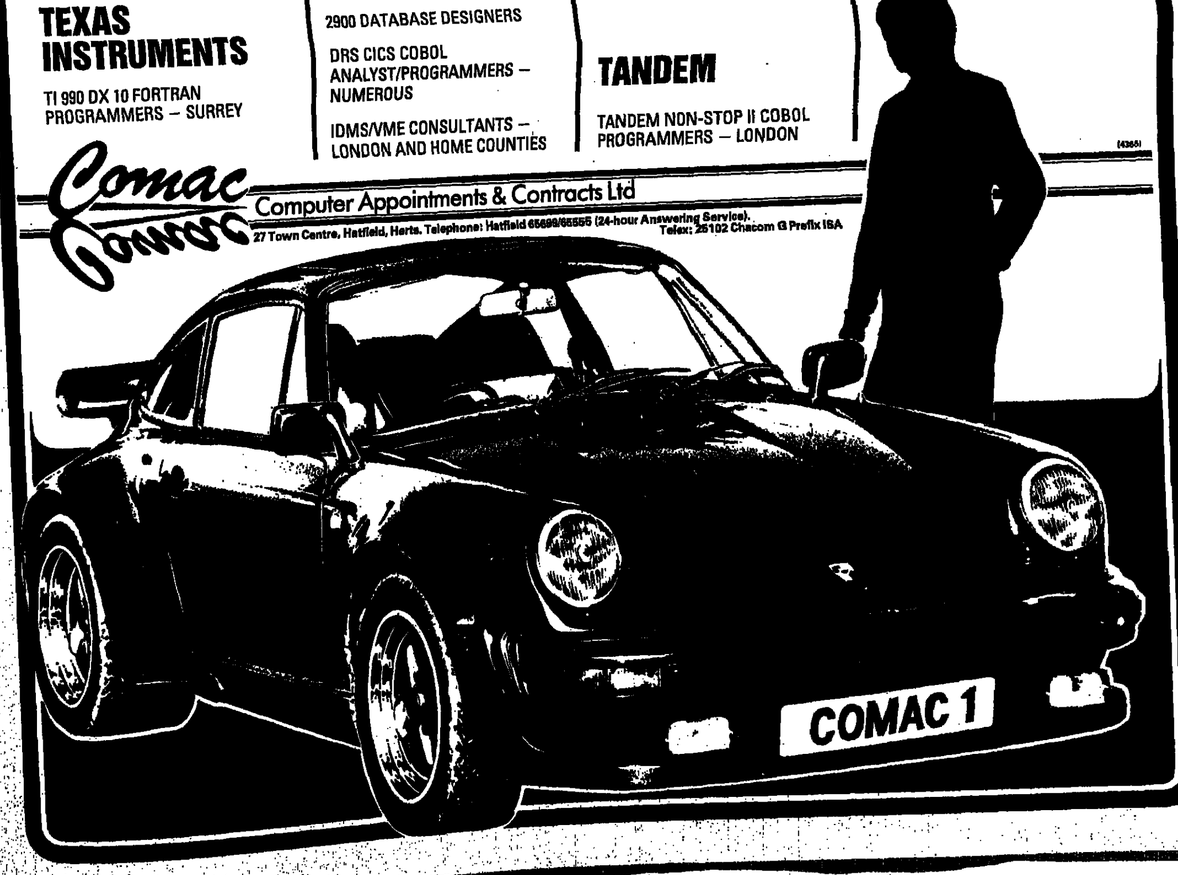

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(4418)

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SALES BIT

Quality of Management – 58

Don't turn off your salesforce with too-high targets

HAVING established whether your sales incentive scheme should be individual or team based and whether short-term or long-term, the next thing is to decide the nature of the competition.

Short-term competitions tend to be specific, concentrating on particular products, transient market situations or special promotions. There may be "3p off" Sudso Superwash for a limited period and the company wishes to exploit it to the full. There may be a decline in new account sales that needs to be addressed, and so on. Therefore, a special incentive scheme is set up to encourage the saleaforce to achieve the required objective. The chosen period could be a week, a month, perhaps even a couple of months, but unlikely to be longer.

I usually think of the long-term incentive scheme as one lasting for the whole fiscal year. This is likely to include every product in the portfolio, or a total revenue target irrespective of the product, or even both. The main objective is to encourage each salesman to make his full contribution towards the company's annual revenue target.

The scoring system may be based purely on revenue but I have always preferred a points system which offers the opportunity of "weighting" the contribution of particular products, method of payment, state of territory, etc. in order both to maximise the contribution to company profitability and make the competition as fair and balanced as possible for all contenders.

A difficult-to-sell, highly profitable product should generate more points than an easy-to-sell product with a low profit margin though the selling price be the same. That's only reasonable. Sales made in a completely virgin territory must surely represent a greater achievement than in a well worked established patch. A points system can redress that situation. And setting an appropriate sales quota can possibly do the job better.

Setting sales quotas is not easy, but it is a skill the sales manager must develop quickly if his incentive schemes are to sustain credibility. Make them too high and you demotivate the entire salesforce; make them too low and you might as well become a registered charity.

The main things to remember are: First, concentrate on obtaining from your peers the lowest possible total sales target, particularly if the competition is based on annual revenue expectations.

Second, no matter how achievable you believe the total objective to be, don't inflate it in order to inflict artificially high targets on your team in the hope of impressing your boss by achievement. There is a far greater risk of turning off your salespeople with targets they believe to be unreasonable than there is of entering the next annual sales convention to a fanfare of trumpets and receiving a plastic plaque from the vice-president's deputy assistant. Deal in truth the whole way through – it's the only way to sustain the respect of your team.

Thirdly, be sure to gear targets to the immediate potential of each sales territory rather than the capability of an individual salesman. No two sales territories are the same. And there is no way of accurately assessing the potential of each individual sales territory; no scientific algorithms, no magic formulas. At best, one is resigned to well-informed estimation. On the other hand if you allow your targets to take into account the relative competence of each of your salespeople, your top performers are likely to think "What's the point of using all my experience and securing well above the average sales to gain the same rewards as newcomers, trainees and others accustomed to lesser achievement?"

An essential element of the long term incentive scheme is that the salesman is as much, if not more, in competition with his own targets than he is with his colleagues

So, having decided on the duration of the sales competition, decided on the unit of measure and set individual sales targets – quotas, budgets, call them what you will – you have to decide upon the mechanism of the scheme. Prizes can be awarded at the end of the competition, but in long-term schemes that may appear too far away at the beginning and by the time the end comes into sight it's too late to make the effort that should have been made at the start.

This can be offset in two ways – first by offering interim prizes, for instance, to the top two salesmen in each region every month, or the one who sold most of a particular product, or most new account business, and so on.

The second, and one which has always had more appeal to my frugal nature is the publication of a monthly "league table" showing exactly what each salesman is achieving to date in order of relative success. That goes on the notice board for all the world to see.

Clearly, the sales manager needs to keep a close eye on the morale and motivation of any sales people whose lowly position is truly beyond their control. Otherwise, this publication can be an effective way of motivating the competitive spirit of the individual and the monthly movement of individuals in terms of their league table standing becomes a source of interest for everyone within the department including technical, secretarial, administrative and other supporting people. Fred Smith, supersalesman, can soon have more kudos than Manchester United!

There are many variations on this theme, but an essential element of the long-term incentive sheme is that the salesman is as much, if not more, in competition with his own targets than he is with his colleagues which avoids much of the resentment that can be introduced by competitions based purely on sales volume.

A variation of the quota-based incentive scheme is one where, instead of selected prizes for the top three or four, there is a significant prize, or one that may be chosen from a selection, for everyone who equals or exceeds a given short or long-term objective. Overseas holidays, luxury goods, household products and cash prizes, are popular choices. Sometimes it's nice to "put the cherry on top" by awarding the top salesman, and only him, something really special.

One computer organisation provides a company Lotus sportscar, another a Rolls-Royce. A bit ostentatious – but very appealing.

The quota/points based long-term incentive scheme (which may also be related to the commission-earning mechanism) has many attractions. If it contains both long-term and integral short-term opportunities for winning, interest can be sustained throughout. By setting levels at which everybody can win – achieving quotas for total duration of competition or period to date – then the resentment of winners and losers is avoided.

Each stage – say, every month – is an opportunity for promoting and revitalising the incentive scheme. Those absent through holidays or sickness have time to get back into the competition. Interest can actually increase over the period as the league table approaches the final countdown. Interim short-term prizes provide the opportunity of rapid reward for effort while making the long haul for the "big one".

Finally, the sales manager must understand – and must persuade his salespeople to accept – that no sales incentive scheme can be absolutely fair and that he has no control over economic circumstances, production capacity and things akin. This has to be established from the very outset of the competition. Salesmen are intelligent and will accept that whatever quotas are set are based on the best estimates available at the time of inception.

Alan Williams

PUZZLE ANSWER

A SUITABLE sum is 9 + 894034 + 54163 + 7188 = 955396. (At the time that this alphametic was formulated, the largest known prime was $2^{19937} - 1$, with "only" 6002 digits!)

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Applicants should have a degree or equivalent in Mathematics, Computer Science or other relevant discipline, and have experience in a scientific technological or commercial field. Arrangements for research towards a higher degree can be made.

Details from: Assistant Personnel Officer, Coventry (Lanchester) Polytechnic, Priory Street, Coventry CV1 5FB. (Please enclose a large self-addressed envelope). Closing date, Friday, 8th July, 1983.

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(4402)

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Initial salary will be within the range £10,710-£14,125 per annum with the possibility of subsequent promotion.

Applications, including the names of three referees should be sent by 15th July, 1983 to The Registrar, The University, P.O. Box 147, Liverpool L69 3BX, from whom further particulars can be obtained. Quote Ref: HW/885.

(4348)

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The main hardware used for the project is a Perkin-Elmer 3220 system.

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Salary according to experience and qualifications.

Application forms available from the Personnel Office, Royal Postgraduate Medical School, 150 Ducane Road, London W12 0HS, quoting reference 7/244/CW

Closing date July 25, 1983

(4434)

THE EUROPEAN PATENT OFFICE

is an international organisation established for the granting of European patents. Its head-office is in Munich (750 staff). The filing and technical examination are executed at the branches in the Hague (900 staff) and in Berlin (130 staff), for this purpose a documentation service of more than 12,000,000 systematically classified patent documents has been organised.

The EDP department is located in the Hague (Rijswijk). The present installation is an IBM 4341 (8MB) operating under VM with DOS/VSE, POWER, CMS, VTAM.

The teleprocessing network consists of local 3274 controllers with 200 terminals attached and a 3705 remote controller with 100 terminals attached (Munich and Berlin) plus RJE and a link to Euronet.

The software used is CICS, UFO, STAIRS, DCF/DLF, APL and IDMS.

The EPO is seeking for its branch in the Hague:

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For administration projects. A complete secondary education and at least four years' experience with COBOL is required: experience with CICS and UFO would be an asset.

COMPUTER CONSOLE OPERATOR

Working on a 24-hour shift basis, to control the operation of the computer from the central console and operate all peripheral equipment.

Secondary education and eight years' practical experience operating large mainframe computers is required. Experience of IBM hardware/software and networks would be advantageous.

For both posts a working knowledge of English is required and some knowledge of French and/or German is desirable.

We offer very attractive salaries and allowances (free of national tax) and conditions of employment in line with the standards of international organisations.

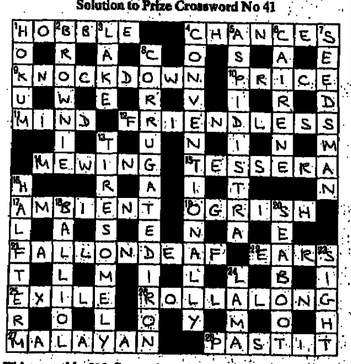
Further information and application forms are available from: Mr D. W. Sparks, European Patent Office, DG1 Personnel Department, Patentlaan 2, 2288 EE Rijswijk, The Netherlands. Tel: (070) 90.67.89.

The closing date for application is 26 July, 1983.

(4418)

CROSSWORD

Solution to Prize Crossword No 41



This month's £10 first prize goes to Graham Paterson, marketing manager, UK and Netherlands, for Teadata in Slough. Prizes of £5 each are on their way to Kevin Hermann, analyst programmer for Scicon Ltd in London, and Eric Hindle, systems analyst for Pendle Borough Council.